

AN ELECTRONIC-RECEIPTS SERVICE

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This application claims the benefit of the filing date(s) of the following earlier application(s):

U.S. Patent Application No. 60/137,575, entitled, "A Web-Enabled Point-of-Sale Device," filed June 4, 1999, naming Scott T. Allan, Timothy L. Droz, Alexander F. Fraikor, Jeffrey T. Miles and J. G. Stout as inventors, with Attorney Docket No. P-68133/TOH/LM, and commonly assigned to @POS.COM of San Jose, California (formerly PenWare, Inc. of Sunnyvale, California); and

U.S. Patent Application No. 60/141,380, entitled, "An Electronic-Receipts Service," filed June 28, 1999, naming Llavanya Fernando and Aziz Valliani as joint inventors, with Attorney Docket No. P-68207/TOH/LM, and commonly assigned to @POS.COM of San Jose, California.

This application is a continuation-in-part of:

U.S. Patent Application No. 08/957,757, entitled, "Method and System for Automated Electronic Receipt of Transactions," filed October 24, 1997, naming Aziz Valliani, Abbas Rafii and Nazim Kareemi as joint inventors, with Attorney Docket No. A-65188/TOH/MAK/LM, and commonly assigned to @POS.COM (formerly PenWare, Inc. of Sunnyvale, California), itself a continuation in part of U.S. Patent No. 08/853,955, entitled, "Modular

Signature and Data-Capture System and Point of Transaction Payment and Reward System," filed May 9, 1997, naming Aziz Valliani, Abbas Rafii and Nazim Kareemi as inventors, with Attorney Docket No. A-63562/TOH, and commonly assigned to @POS.COM of San Jose, California.

5 U.S. Patent Applications No. 60/137,575, 60/141,380, 08/957,757 and 08/853,955 are incorporated by reference herein.

BACKGROUND

This invention relates to electronic commerce. More specifically, this invention relates to transaction-records depositories for electronic-data warehousing and retrieval and the availability of these depositories and electronic receipts over the web.

Successful world-wide-web ("web") portals appeal to advertisers and other marketers. Such portals provide an advertiser access to large numbers of potential customers targeted according to their buying or browsing interests. For that access, an advertiser will readily pay a web-portal provider.

For the provider of a web portal, the problem becomes one of achieving a scale that provides a potential advertiser with an adequate number of consumer viewers such that the advertiser would pay for access to them.

Turning to a different art, it is believed that worldwide point-of-sale (POS) locations number about seventeen million, eight million of which are in the United States. Retail POS sites account for two million of these locations, and the remaining six million are located in hotels, health clubs, hospitals, commercial banks, health-care providers, insurance agencies, etc.

Electronic cash registers, no-frills card-swipe electronic-funds-transfer units and signature-capture platforms dominate these U.S. POS locations. A consumer pays presenting cash, a check, a debit or credit

card, an electronic-funds transfer card (automated-teller-machine card) or a smart card. The genesis of prior-art cash registers was, of course, the receipt of currency. The register evolved to generate a paper transaction receipt and, still later, to accept and perform the initial processing of paper
5 checks. With the introduction of debit and credit cards, cash registers evolved still further to incorporate card readers. The card readers are integral to the main body of the cash register or are distally located closer to the customer as compared to the register operator but nonetheless connected directly to the cash register. (In the latter distally located
10 incarnations, these card readers are termed "stand besides.") Finally, registers today incorporate signature capture mechanisms to facilitate debit and credit card transactions.

With the introduction of payment by electronic fund transfer, cash registers sprouted stand besides that incorporated not only card
15 readers for debit, credit and EFT cards but also keypads for entry of validating personal identification numbers (PINs).

On a somewhat orthogonal track, the cash registers evolved from paper-receipt generators without any display to their current state: still paper-receipt generators but with simultaneous readout of a (somewhat
20 brief) description of the one item currently being priced along with the price of the item. The stand-beside with the card reader and keypad also includes a small (typically two-line) alphanumeric liquid crystal display (LCD) presenting transaction totals, labels for keys on the keypad and minimal instructions to the consumer on how to proceed.

25 Estimates of the time a consumer typically spends at various points-of-sale (POS) platforms range from 30 seconds at convenience stores to 3.5 minutes at supermarkets. Averaging across POS platforms, the consumer spends 1.7 minutes at a POS. Assuming an average of 30 visits per day for the typical POS, these visits represent 240 million individuals per
30 day captured at POS platforms for 1.7 minutes each time in the U.S. alone.

Accordingly, it is desirable to aggregate POS sites to achieve a

scale of consumer viewers such that providing content to the aggregate POS sites becomes economically desirable.

Assuming a 10-second impression and an average cost-per-thousand-impressions (CPM) rate of \$25, the U.S. POS platforms alone
5 represent 2.4 billion impressions in one day, for a value of nearly \$22 billion annually.

It is desirable to leverage the installed base of POS devices and enable them with graphic abilities to permit advertising at a POS location, leveraging a captive audience that is in a "spending mode."

10 Indeed, it is desirable to further leverage the near ubiquity of POS devices by enabling them to present web-based information (including advertising, surveys and promotions) to the customer and to use web technologies.

15 A portal provider seeking to operate in a retail environment faces the barrier of the installed base of traditional, non-web-enabled POS payment platforms. Merchants are familiar with their traditional platforms and not overly willing to discard the capital investment that they represent. Many large retailers operate in legacy environments with limited technical
20 functionality in their networks and computers. These limitations include older electronic cash registers with limited memory and proprietary operating systems, as well as legacy software and limited-bandwidth in-store networks.

It is therefore desirable to extend the life of traditional POS
25 platforms to incorporate web technologies and advanced POS-device capabilities. (This includes placing the web-enabled POS device as a stand beside with limited connection to the non-web-enabled POS payment platform. The web-based data center associates the stand beside and the traditional POS platform (through the merchant data
30 center).)

Once such advanced capability is signature capture.

Advances in signature-capture platforms have made such platforms popular in the industry. However, integrating electronic-signature capture and storage into legacy systems can be both complex and costly.

It is therefore desirable to extend the life of traditional POS platforms by getting them to cooperate with stand besides that incorporate web technologies and advanced POS-device capabilities.

Nearly catholic in merchant-consumer interactions, particularly face-to-face transactions, is the generation of a receipt to summarize and memorialize a transaction. Even where the transaction has otherwise been completely electronic (the purchase of an e-ticket on an airline's internet web site, for example) and even where the business has otherwise automated its operations, the generation of a receipt is necessary for many reasons. Receipts facilitate exchanges, returns and the resolution of disputed charges, for example.

With receipts generated for the vast majority of transactions, the presence of so many receipts may be counterproductive. The costs to process, store and retrieve these receipts in a timely manner can force a merchant to adopt policies under which it accepts losses rather than disputes a charge or return.

For example, when a customer disputes a credit transaction with his bank, the bank submits a formal transaction-dispute record on paper to the subject merchant. At some appreciably later time, the merchant then faxes to the bank a copy of the paper transaction receipt that the merchant maintains. The delay can frustrate the customer, and the on-again, off-again nature of the transaction investigation is inefficient for the bank.

Accordingly, it is desirable to achieve both of the seemingly conflicting goals of reducing customer-service costs, on the one hand, and improving the quality of service to the consumer, on the other hand.

It is desirable to severely reduce or even eliminate altogether

the costs associated with paper receipts (including labor, storage, retrieval, transaction disputes and charge back) while nonetheless providing relatively immediate access to the information contained on such paper receipts.

5

The POS payment terminal model 3100, available from the assignee of the instant application, is an example of a prior-art POS device.

Nichtberger et al., U.S. Re-Issue 34,915 (1995) teaches an electronic display of coupons valid for use in a particular store presented to
10 customers in that store. The display presents coupons after the customer inserts a card into the unit. The customer then selects the coupons he hopes to redeem and then proceeds to shop.

The Nichtberger et al. system records the selection and makes information identifying the customer and the selected coupons available
15 to each of the checkout stations in the system. A receipt identifying the selected coupons may be printed for the customer's convenience.

After the customer has made his purchases, he presents his card to the attendant at the checkout station. A card reader reads the card. The Nichtberger et al. system automatically credits the customer for
20 the previously selected coupons that correspond to actual purchases against which the coupons are to be applied.

Thereafter, information regarding the redeemed coupon is transmitted to an operations center that then automatically debits the manufacturer who distributed the coupons and credits the supermarket
25 (corresponding to the checkout station) where the coupon was redeemed. (The operations center also enables the initial presentation of video images of the coupons.)

The use of a personal computer (typically an "IBM-compatible personal computer" or PC) as a POS device is known. However, the
30 amount of space available at a POS site is limited and a PC tends to be too big for the available space. Also, a PC customized for POS activities can

be costly.

It is desirable, therefore, to better use the limited valuable retail space with POS devices with smaller footprints.

It is desirable to eliminate the expensive magnetic pens used
5 by competitors.

These and other goals of the invention will be readily apparent to one of skill in the art on reading the background above and the description below.

10

SUMMARY

Herein are described apparatus and methods for a web-based transaction data storage and retrieval offering for merchants and customers. The service provides retailers the operational cost savings of
15 electronic signature capture with minimal integration of such signatures into their legacy systems. Transaction data including signatures are securely transmitted (in real time, delayed or in batch) from the merchant to the remote, transaction-record repository. An internet browser then accesses an electronic-records-service web-site that provides a straightforward, user-
20 friendly interface (for searching transaction-record data) for recreating receipts as proof of a transaction.

When a transaction record (a receipt, for example) is required, the customer, the merchant's employees or designated financial agents of the customer or the merchant (banks or payment processors, for example)
25 access the electronics-records service through an internet using a web browser. These records may be viewed, downloaded, printed, faxed, e-mailed or otherwise transmitted to the desired recipient.

To access an electronic record, the user visits the electronic-records website, logs in and selects the transaction for which he wishes to
30 view a receipt. The user may search using multiple criteria (date, store location, total transaction amount, for example) and may view an image

of the receipt. The user may use the retrieved transaction record to dispute a charge or to return or exchange a good.

The electronic-records service thus provides a rapid and cost-effective means to serve customers while simultaneously improving the
5 quality of that customer service.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a diagram illustrating an electronic transaction
10 system **100** incorporating one embodiment of the invention.

Figures 2, and **3** illustrate embodiments of the transaction computer (TC) portion of a web-enabled interactive point-of-sale (iPOS) device.

Figure 4 is a block diagram illustrating the subsystems of a
15 generalized transaction computer in a POS system.

Figure 5 is a block diagram illustrating an electronic-transaction system that is an expansion of the electronic-transaction system of **Figure 1**.

Figure 6 illustrates the hierarchy and relative breadth of control of roles.

Figure 7 illustrates the point at which the log is updated in the
20 sequence from searching for transaction details to receiving the same.

Figures 8 and **9** show trees of web pages for the electronic-receipts service according to one embodiment. **Figure 8** shows the web pages accessible from the home page of the service.

Figure 9 shows the web pages accessible from the server of the
25 electronics-receipts service.

Figures WP1 - WP30 are example web pages for the electronic-receipts service, particularly from the viewpoint of a user of the service.

Figures A1 - A3 show the relationship of web pages of **Figures**
30 **WP1 - WP16** and **WP20 - WP28** to each other.

DESCRIPTION OF SPECIFIC EMBODIMENTS

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25

ABBREVIATIONS

Following are abbreviations which may appear in this description, along with their expanded meaning:

eReceipts, electronic receipts.

30

POS, point of sale.

SIV, secure internet vault.

TC, transaction computer.

TUID, transaction-unique identifiers.

DEFINITIONS

- 5 Administrator: A manager of group users and users in sites.
Administrator manager: A merchant employee responsible for a site group.
An administrator manager may manage administrators, users and sites.
- Batch: See "offline."
- 10 Field map: See "mapping."
- Group guest: A user that can search and see information from all sites in a group.
- Group user: See "group guest."
- Guest: A user that can see information from one site. "Guest" and "group user" are used interchangeably.
- 15 Mapping: The use of generic fields in the data-farm database, which fields are available for a site to use. For example, only Federated uses "STT" to identify a transaction. The service does not store "STT" as a field but rather gives Federated a generic field and allows the merchant to refer to it with the store-specific name.
- 20 Merchant: The store or location entity storing transactional information in electronic receipts. The user usually is located at a merchant or merchant headquarters site.
- 25 Offline: The store-and-forward model of transferring information to and/or from the Web host.
- Row: A dictionary of strings. In one embodiment, the row is the foundation of information transfer for eReceipts objects.
- 30 Search service: The visual and interactive part of the data farm, which

part executes on a web server and browser.

Service administrator: The data-farm person responsible for administrating data-farm internal data (for example, site groups, administrator-managers).

5 Site: A specific store within a site group, q.v. For example, Macy's store #182.

Site group: The group of sites that compose a merchant's stores. Sometimes a client but usually a merchant.

10 Storage service: The part of the data farm that stores transactional and consumer information in the databases.

Table: A dictionary of rows.

Transaction keys: The keys in a transaction that make the record unique from all others. In one embodiment of the data farm, the transaction keys are the TUIDs. Each consumer has
15 his own transaction key (which the data farm refers to internally as the transaction indexes).

User: The individual accessing the electronic-receipts service through a web browser.

20 OVERVIEW

Figure 1 is a diagram illustrating an electronic transaction system **100** incorporating one embodiment of the invention. The system **100** includes one or more merchants **120**, optional, intermediate data center(s) **130**, a central data farm **140** and a personal computer **190**. The system **100**
25 also includes communications links **160**, **170** and an internet **180**.

Each merchant **120** and some or all of the optional intermediate partner data center(s) **130** communicate over the communications link **160**, typically a private network. The optional intermediate partner data center(s) **130** communicate(s) with the data
30 farm **140** using the communications link **170**, also typically a private network. (Where no intermediate data center **130** is present, the

merchant(s) **120** and the data farm **140** communicate directly using the then-unitary communications links **160, 170.**)

In addition to communicating using the private networks **160, 170**, the merchant(s) **120**, any optional intermediate data center(s) **130** and the data farm **140** are each communicatively connected as hosts on the internet **180**, allowing any one to communicate with any other one through that internet **180**. (The personal computer **190** is viewed as a host on the internet **180**, although its actual status is more likely to depend on the directness of its connection to that internet **180**, for example, through optional service providers not shown.)

A merchant **120** includes a merchant data center **127** and one or more point-of-sale (POS) systems **126**. A POS system **126** and the merchant data center **127** communicate over a communications link **128** (typically a serial link) or a communications link **122**. In addition to communicating using the link(s) **128, 122**, the POS system **126** is communicatively connected as a host on the internet **180**, allowing communication with any other host on the internet **180**.

In one embodiment, the POS system **126** includes a portion **1262** that is typically a non-web-enabled cash register (although the portion **1262** may be web-enabled). An optionally web-enabled portion **1261** is herein termed the "transaction computer." A communications link **1263** may communicatively couple the portions **1261, 1262**. The web-enabled transaction computer **1261** connects the POS system **126** to the internet **180**.

The POS system **126** may integrate the typically non-web-enabled ("cash-register") and web-enabled portions **1262, 1261** of the POS payment platform, may maintain them distinct from but directly connected to each other or may only associate the non-web-enabled and web-enabled portions **1262, 1261** of the POS platform (i.e., indirectly connect the cash-register and interactive web-enabled portions **1262, 1261** of the payment platform.) Alternatively, the POS system **126** may omit the non-

web-enabled portion **1262** of the POS platform altogether, as would typically be the case with small merchants **120**.

An alternative embodiment of the POS system **126** is as a web server where consumers can purchase products.

5 A walk-through of a typical transaction illustrates the system **100** in situ: A customer of a merchant **120** enters the merchant **120**'s POS location or web site having the POS system **126**. The customer wishes to purchase a selection of the merchant **120**'s goods.

 The customer presents to the merchant **120**'s sales agent the
10 selected goods. The sales agent identifies each each of the selected items, by scanning each past a bar-code scanner (not shown) in the POS system **126**, for example. (The currently popular form of marking items for subsequent scanning for purchase is by Uniform Product Code (UPC). The use of UPC is well known in the art and is, therefore, not described herein.)
15 Say, the customer is buying a personal portable Walkman (tm)-type stereo, inter alia.

 With each item identified, the POS system **126** and the merchant data center **127** communicate. The result of the communications is that the customer is shown a description of the item last
20 identified, its price, a running total of items identified for purchase so far, a running tax amount, etc. These descriptions may display on the transaction computer **126**.

 The POS system **126** also communicates with the data farm **140** as the items are identified. The result of the communications is that the
25 customer is presented with content that the data center **140** determines is appropriate for the customer buying the identified items. Because the customer is expected to be at the POS system **126** about 90 seconds, the data center **140** instructs the POS system **126** to display a multiplicity of distinct contents. For example, the customer may see an instantly
30 redeemable coupon for the personal portable stereo that he is currently purchasing. He may see a coupon for the type of batteries that power the

portable stereo he is purchasing. He may see a survey from the merchant **120** regarding service at the merchant **120**'s store (or web site) or from a manufacturer **130** regarding consumer electronics. He may see an interactive advertisement.

5 In a batch system **100**, items are identified and stored in the merchant data center **127** and bulk (batch) data is communicated to the data farm **140** at predetermined times.

Each transmitted content encourages the customer to attend to and, as appropriate, to indicate consent to its proposition. For the case
10 of the instantly redeemable coupon, the content encourages the customer to select the coupon by touching an area of the screen of the POS system **126** or clicking on an area of a web page, for example.

Any response to a content is communicated to the data farm **140**. The farm **140** may alter the current or any subsequent presentation of
15 content to conform with the response it received. (The lack of a response, which is of itself useful information, may or may not be explicitly communicated to the data farm **140**.) Additionally or alternatively, the interactive portion **1261** may be so responsive.

At some point in the transaction, usually after the sales agent
20 has identified all of the items that the customer selected and the POS system **126** has displayed the transaction summary, including a total, the customer presents a form of payment. Where the payment is a credit card, the customer swipes the card through the POS system **126** and signs electronically, allowing the POS system **126** to capture his signature. The
25 POS system **126** forwards the transaction data and captured electronic signature to any of the merchant data center **120**, the optional partner data centers **130** and the data farm **140**, directly or through forwarding.

Where the customer presents an electronic-funds-transfer card for payment, he swipes the card through the POS system **126** and enters his
30 validating PIN number.

After the form of payment has been accepted, the POS system

may ask the customer whether he would like a printed receipt, informing the customer that the merchant **120** will maintain an electronic, non-paper receipt available to the customer at all times (should the customer desire this availability), regardless of the customer's preference for a printed

5 receipt.

On completion of the transaction, the POS system **126** forwards to the data center **140** such additional information as necessary to allow the data center **140** to reconstruct the transaction from its records. (This may happen immediately or later in batch processing.) The data center

10 **140** thus may store data from multiple merchants **120**.

Later, the consumer may visit a website to access this receipt for initiating a charge dispute, downloading into a personal finance application, returning an item, reporting taxes, etc. The merchant **120** can also visit a web site to view the receipt.

15 Where the merchant **120** is a service provider rather than a purveyor of goods, a typical transaction may instead proceed as follows: An estates-and-trusts law firm **120** completes a will for a client. The client executes the will, signing electronically. The will (including the signature) is transmitted to the data farm **140** for storage and for viewing using the

20 client's personal computer **190**.

Identification of the customer may occur early in the transaction. This early identification may help target the contents for display to the identified customer.

25 DEVICES

- Web-Enabled Interactive Point-of-Sale Device

Figures **2** and **3** illustrate embodiments of the transaction computer (TC) **1261** of a web-enabled interactive POS system **126**.

Figure **2** is an illustration of a TC **200** of a POS system **126** according to one embodiment of the invention. The TC **200** includes a

30 screen **210**, a display **220**, a touch screen **230** and electronic-signature-

capture system **240**, a card reader **250**, a CPU **260**, memory **270**, a pen **2A0** and a stand **290**.

The display **220** may be a full or partial VGA, SVGA or XGA display, in some embodiments one-quarter VGA. The display **220** may be
5 monochromatic, limited color or full color, but preferably the last.

The touch system (including the touch screen **230** and its supporting hardware and software) translates contact with the screen **210** into coordinates in the display **220**.

The electronic signature-capture system is explained more fully
10 in U.S. Patent Application No. 08/853,955, incorporated by reference herein.

Figure 4 is a block diagram illustrating the subsystems of a generalized transaction computer **200** or **300** in a POS system **126**. The TC **200, 300** includes a processor subsystem **510**, a security subsystem **520**, an input subsystem **530**, an output subsystem **540**, a payment subsystem **550**, a
15 communications subsystem **560** and a bus **570**. The bus **570** communicatively couples all of the security, input, output, payment and communications subsystems **520, 530, 540, 550, 560** to each other and to the processor subsystem **510**.

The processor subsystem **510** includes a CPU **511**, a memory
20 **512** and a bus **513**. The memory **512** includes random-access memory (RAM) **5122** and an optional flash memory **5121**. The bus **513** communicatively couples the CPU **511** and the memory **512** and may be wholly or partly integral with the bus **570**.

The memory **512** includes software (not shown) as follows: a
25 web-directed language processor, a protocols stack separate from or integral with the language processor, an input/output subsystem capable of driving ports in the communications subsystem **560** and other drivers as necessary to operate the input, output, payment and security subsystems **530, 540, 550, 560**. Hyper-Text Markup Language (HTML) and Java
30 (available from Sun Microsystems of Mountain View, CA) are the web-directed languages currently enjoying the most popularity, while the

HyperText Transmission Protocol (HTTP), Transmission and Control Protocol (TCP) and Internet Protocol (IP) are currently the most popular protocols. Extensible Markup Language (XML) and Secure Socket Layers (SSL) are examples of other applicable, popular protocols.

5 The memory **512** may also include application software (not shown) for processing data from the input subsystem **530**. For example, certain application software can convert an electronic signature that the subsystem **530** captured into its equivalent ASCII character sequence.

10 The input subsystem **530** may include a keypad (not shown), a touch screen **531**, a keyboard (not shown) and a voice-recognition system (not shown).

15 The output subsystem **540** may include a display **541** that is preferably a color liquid crystal display (LCD), a sound system **542** that is preferably a speaker and a bus **543**. The bus **543** communicatively couples the display **541** and the sound system **542** to the bus **570** and may be wholly or partly integral with the bus **570**.

20 The payment subsystem **550** may include a magnetic-strip reader **551**, a smart-card processor **552** and a bus **553**. The bus **553** communicatively couples the magnetic-strip reader **551**, the smart-card processor **552** and the bus **570**. The bus **553** may be wholly or partly integral with the bus **570**. (In one embodiment, the input system can also handle the other types of payment mentioned herein.)

25 The communications subsystem **560** includes a serial port **564** that is preferably an RS-232 or RS-485 port, an auxiliary port **563** that is preferably an RS-232 port, a parallel port **562** (preferably a Universal Serial Bus (USB) port), a high-speed communications port **561** and a bus **565**. The bus **565** communicatively couples the ports **564**, **563**, **562**, **561** to the bus **570**. In some embodiments, the bus **565** is wholly or partly integral with the bus **570**.

30 In some embodiments, the TC **200** includes or supports at least one of the following peripherals (not shown): a check reader, a printer, a

scanner and a system for electronically capturing biogenic content such as fingerprints or retinal images.

The touch pad **230, 531** typically underlies the display **541**, although it need not be co-extensive with the display **541**. Where, for example, the display **541** is full VGA or XGA and the touch pad **230, 531** is only one-quarter so, that portion of the display **541** over the touch pad **230, 531** may be reserved for touch-pad activities such as electronic-signature capture on an HTML page not otherwise requiring touch-pad support.

10 - An Electronic-Transaction System

Figure 5 is a block diagram illustrating an electronic-transaction system **600** that expands on the electronic-transaction system **100** of **Figure 1**. The system **600** includes a merchant **120** and a web-enabled data farm **140**. The system **600** also includes communications links **160/170** and an internet **180**.

A brick-and-mortar merchant **120** includes an interactive POS system **126** (here elided to its constituent TC **1261**), a dumb host **121**, a smart host **122**, a store controller **123** and a corporate server **124**, as well as a communications link **128**. Each of the POS system **126**, smart host **122**, store controller **123** and corporate server **124** includes a software agent with sufficient intelligence to communicate with the data farm **140**.

A web-based merchant **120** includes a POS system/server **126/124**. The POS system/server **126/124** includes a software agent with sufficient intelligence to communicate with the data farm **140**.

The merchant **120** and the data farm **140** communicate directly using the communications links **160/170**.

- The Data Farm

The data farm **140** maintains a database **141** of one or more of the following and similar documents: transaction records, legal documents, banking records, credit-card records, bills, photographs, consumer data and billing information. The transaction records include receipts useable for tax, warranty or expense-report purposes. The legal documents include documents such as wills, insurance policies and contracts.

10 The data farm **140** stores the documents in electronic text form (typically when the document was created electronically as in a word processor) or in a digital-image form (as results from scanning or faxing, for example). An electronic signature may accompany any particular document, and a document (with or without an accompanying electronic signature) may have an authenticating digital signature. XML is an
15 example electronic-text format.

In securely maintaining all of these documents important to the consumer, the data farm **140** takes on the nature of a vault. As such, services related to the storage of documents are herein termed "secure internet-vault services."

20

- The Merchant Data Center

For the electronic-receipts service, the merchant data center **120** maintains a database **125** of product UPCs, SKUs or like codes, product descriptions and product prices for products that the merchant stocks. The
25 merchant data center **120** can thus translate a given product code from a customer-selected product into a product description and a product price.

The merchant data center **120** also maintains a database of POS platforms to which it responds. Thus, when the POS system **126** sends a product code to the merchant data center **120**, the center **120** recognizes
30 that iPOS platform and responds to the same.

The merchant data center **120** includes first, second and third

communications ports (not shown) and a processor (not shown). The processor and the first communications port enable communications with the POS system 126 over the communications link 128. The processor and second communications port enable communications with any partners
5 over communications link 160, and the processor and third communications port enable communications over the internet 180.

Where the POS platform is capable, some of this intelligence may reside in the platform.

10 PROTOCOLS

The protocols enabling the invention are more fully described below.

- Primary-Channel Priority

15 As illustrated in **Figure 1**, the TC 1261 receives input from three sources: the customer, the merchant data center 127 (via the communications links 128, 1263) and the data farm 140 (over the internet 180). As information critical to the transaction (for example, instructions to go into electronic-signature-capture mode) flows over the link 1263, that
20 link 1263 between the merchant and the TC 1261 is herein termed the "primary channel."

As bandwidth necessary on the primary channel to carry the expected command instructions is very low, the primary channel is preferably a low-cost, low-speed channel such as RS-232 or RS-485.

25 The second channel connected to the TC, the internet 180, carries customer-targeted information secondary to the transaction (insurance claims, loyalty-program details, new credit-card-account offers, for example) and returns customer-supplied information (for example, survey responses, coupon selections and menu choices). As this
30 information is secondary to the transaction, this channel is herein termed the "secondary channel."

The second channel provides a high bandwidth in order to carry the expected graphics- and/or audio-intensive web information.

As described above, the TC **1261** displays information from both the primary and secondary channels simultaneously to the customer.

- 5 In one embodiment, the (second) area of the TC display used for displaying secondary (customer-targeted) information overlaps areas of the TC display used for primary (transaction-critical) information. For example, with the transaction drawing to a close, the customer needs to use the signature-capture portion of the input subsystem 531, but the area of the TC
10 display used for signature capture is actively being used to display an advertisement.

- As another example, even where the first and second areas for the first and second channels do not overlap, the CPU **511** may be so involved in the processing of information from the secondary channel, it
15 may not respond to information available on the primary channel in a satisfactory human-factors manner.

- The issue then is one of control. The TC **1261** is designed such that information (including instructions) received on the primary channel overrides information (again, including instructions) received on the
20 secondary channel. Thus, the customer and (perhaps more importantly) the customers in line behind the customer do not have to wait for the secondary information processing to complete before the customer completes his business at the POS site.

- A real-time operating system in the TC **1261** facilitates this
25 primary-channel priority. When running both the low-speed primary port **564** and the high-speed secondary port **561** from interrupts, giving the low-speed primary port **564** a higher priority than the high-speed port **561** enables the CPU **511** to handle more expeditiously the transaction-critical primary-port data. Similarly, placing the low-speed primary port on
30 interrupts while polling the high-speed secondary port enables the CPU **511** to handle more expeditiously the primary-port data.

Giving a low-speed port higher priority than the high-speed port is counter to the general tenets of computer science: Usually, the better use of the CPU 511's cycles is to handle the high-bandwidth channel before the low-bandwidth channel. More data is received per cycle, and the potential bandwidth of the high-speed channel is realized as fully as possible. The counter-intuitive approach nonetheless achieves the ends of the invention.

Significant amounts of data may be available at the high-bandwidth channel, data to which the CPU 511 cannot immediately attend. Accordingly, the communications subsystem 560 may include a buffer 566 associated with the high-bandwidth channel in order to capture that available data without involving a CPU 511 committed to higher-priority data. Such a buffer 566 helps to realize the high bandwidth of channel 561.

- Electronic-Receipts (e-Receipts) Service

The electronic-receipts service described herein is a web server-based application that communicates with a client using a web-directed language. Typically, the client is a web browser and the web-directed language is HTML or XML. Among the objectives of the electronic-receipts service are the delivery of the receipt to the browser and a focus on the needs of the merchant.

The electronic-receipts service provides consumer-transaction details from a central database and presents this transaction information to the service user (typically, the consumer that performed the transaction). Transaction information may include the date and time of the transaction, as well as merchant-oriented fields, rendered signatures and line items. The gathering of information may apply to "physical" transaction occurring at a merchant location as well as to cyberspace transactions occurring at an e-commerce website.

When fully deployed as envisioned, the electronic-receipts

service has many users, sites and transactions.

— Roles

The electronics-receipt service establishes hierarchical roles for
5 a user. In one embodiment, there are five (5) possible roles: service
administrator, administrator-manager, administrator, guest and data.

Figure 6 illustrates the hierarchy and relative breadth of control
of each of these roles. In **Figure 6**, a higher level has control over lower
levels. For example, an administrator-manager's control includes and
10 exceeds any control a guest has.

The exception is that all roles — except a service administrator
— are able to search for transactions.

— Data Role

15 To prevent each user from having to have access to
information for every table in its database, the electronic-receipts service
uses the data-access roles of "system," "data" and "administration" to
facilitate a user's access to data.

The system-data role gives access to the relational-database
20 management system (RDMS) engine to read and initialize the current user's
system. It also allows access to update the logs.

The data role has permission to read data tables (for example,
transaction, line-item and non-searchable tables).

The administration-data role has permission to read and
25 update information related to the administration of the electronic-receipts
service.

— Guest Role

The guest role has basic access and viewing rights to the electronic-receipts service. The guest role may be used, for example, for
5 short-term access for executives or remote support personnel.

— Administrator Role

The administrator role has the responsibility to maintain group
users and users.

10

— Administrator-Manager Role

The administrator-manager has the additional responsibilities of maintaining sites and administrators and of handling exceptions. As to the last, if the electronic-receipts storage service has any exceptions, the
15 administrator-manager handles the data corrections and provides the corrected data to the electronic-receipts storage service.

Where the administrator manager does not create administrators, the administrator manager takes on the responsibilities of those absent administrators.

20

— Service-Administrator Role

An-electronic receipts-service service administrator has the most control over the electronic-receipts service. A service administrator's responsibilities include maintaining all of the role data, the field maps and
25 administrator-managers. A service administrator's responsibilities also include setting up new site groups and search capabilities.

The administration of site groups includes adding, removing and changing a site group (including adding a field map for a site group) and adding an administrator-manager for a site group. In one
30 embodiment, the service administrator is the only role that adds, removes or changes site groups. It is also the only role that removes sites.

-- Security

Security is a prime focus on electronic-receipts service. Most security relating to the transmitted data relies on the Secure Socket Layers
5 Protocol, available from Netscape Communications Corporation (now a part of America Online, Dulles, VA, itself announced to merge with Time Warner of New York, NY) and well known in the art. To protect consumer information, for example, the electronic-receipts service may mask a portion(s) of a credit-card number or apply a grid over a signature. The
10 service may restrict access to user information by requiring a password (matching the user name). Also, as described above, access to database data is restricted by role — in the manner of a need-to-know policy. Merchants can have an administrator that can give access to outside entities to their data, to payment processors, auditors credit-card
15 companies, as a few examples.

— Logging

The electronics-receipt service generates billing events to enable its billing system to assemble information for billing purposes. The
20 billing system charges only once for successive views of a transaction.

A user's viewing a transaction or receipt triggers the billing event reflecting that viewing. **Figure 7** illustrates the point at which the billing event is created in the sequence from searching for transaction details to receiving the same. The data in the billing events contain all the
25 information needed to track and bill for the recreation of a consumer's transaction and receipt.

Figures 8 and 9 each show a tree of web pages for the electronic-receipts service according to one embodiment, particularly for the administration of the service. **Figure 8** shows the site map to the
30 electronic-receipt service. Users typically start at the Home Page and select pages as desired. **Figure 9** shows the site map for the administrator's

access to the electronic-receipts administrative functions, allowing such administrators to look up, add and delete users.

The Appendix attached hereto includes **Figures A1 - A3** as well as **Figures WP1 - WP30**. **Figures WP1 - WP30** are example web pages for the electronic-receipts service, particularly from the viewpoint of a user of the service. **Figures A1 - A3** show the relationship of the web pages of **Figures WP1 - WP16** and **WP20 - WP28** to each other. To avoid repetition and clutter, **Figures A1 - A3** omit the menu frame at the extreme left of **Figures WP1 - WP30** after detailing each version of the menu frame when it first appears. Similarly, **Figures A1 - A3** omit the menu bar across the top of the Welcome (**Figure WP5**) and dependent web pages — after detailing the menu bar when it first appears. Further, **Figures A1 - A3** omit self-referential links on a web page: for example, "Home" on the homepage (**Figure WP1**) and "My Personal Home Page" on the welcome web page (**Figure WP5**).

Figure WP30, WP29 and **WP17** are alternate embodiments of the Receipt-Details webpage of **Figure WP8**. Likewise, **Figure WP18** is an alternate embodiment of the Personal-Reminders webpage of **Figure WP14**, and **Figure WP19** an alternate of the View-New-Receipts **Figure WP7**.

The Appendix is incorporated herein by reference.

— Adding a New Site Group

When the electronics-receipts service adds a new site group, it follows the following processes: The service administrator adds a new site group and adds a field mapping and a super-administrator manager for the site group. The administrator manager in turn adds sites and administrators for the site group. The administrator(s) add(s) users for the site group as necessary and add(s) users for each site in the site group. (Where an administrator manager does not add an administrator, the administrator manager takes on the role of such an administrator.)

— Configuring a Site

The electronic-receipts service provides a new site with its site identification ("site ID"). The new site stores its site ID into a location that the machine may use when talking to the electronic-receipts service. The site may get the site ID manually (that is to say that the administrator himself seeks the site ID from the electronic-receipts service), or the site may get the site ID automatically. In the latter case, the site accesses an electronic-receipts-service service. The machine contacts the service, gives it its site name and requests a site ID. (The machine may encrypt the site ID before storing the same.)

— The Electronic-Receipts Storage Service

The electronic-receipt storage service receives transaction information from a POS platform or bulk data transfer (i.e., batch) from a merchant and stores the information in the data farm, typically in a relational-database management system (RDBMS).

The electronic-receipts service may indirectly store the information. An electronic-receipts transaction service listens for transaction messages. The transaction service disassembles the message and stores the data into a database.

Where there is no temporary database the data is incorporated into the permanent database. Exceptions in either processing (temporary or non-temporary) the merchant or the data farm handles automatically.

The transaction service may be a combination of two services: a temporary-database service and a permanent-database service. When the transaction service gets a message, it tells the temporary-database service which then stores the data into a temporary database.

The electronic-receipts service periodically merges the temporary-database data with the real electronic-receipts-service

database. This merge happens since batch processing also feeds data into the temporary-transaction database. This merge and store is the function of the permanent-database service.

- A site and the electronic-receipts service may communicate using messages that are name-value pairs or markup-language entities. The following is an example of a transaction communication used to create a transaction entity:

SiteID=981&TUID1=8171123&TUID2=0&TranType=0&PayType=1&AcctNum=4430928209&ExprDate=1999/12/02& ...

The temporary-database service splits the name-value pairs apart and places the data into an SQL-server table.

- The set of names for such transaction-table name-value pairs may include the following: SiteGplD (the site group ID), SiteID (the site ID), TUID1 and TUID2 (transaction unique identifiers), TranType (the transaction type), DeptID (the ID of the department where the transaction occurred), AcctType (the account type), AcctNum (the account number), ExprDate (the expiration date of the card), AuthCode (the authorization code), AuthSrc (the ID of the authorizer), MerchID (the merchant ID), DateStmp (stamped date and time), and Customer_Signature. The set of names also includes site-defined names mapped to generic fields.

- Of the foregoing, the electronic-receipts service requires a site to provide the SiteID, TUID1, TUID2, TranType and AcctType pairs. The service itself provides the SiteGplD pair. The remaining pairs the site itself provides at its option.

- The transaction type may be a sales, return or void. The department ID may be unspecified or one of a dictionary of department IDs. The account type may include credit card, cash, debit card, check, smart card or unspecified. The account number is the number of the customer's payment card, checking account, proprietary card, etc. The ID

of the Authorizer is, for example, NPC, FirstData or unspecified.

The service maintains a table of line items. The set of names for line-item-table name-value pairs may include the following: TUID1, TUID2, LineNum (the line number for each item in a transaction), Descr (the
5 description of the item), SKU (stock keeping unit), UPC (the Universal Product Code for the item) and DeptID.

Of the foregoing, the electronic-receipts service requires a site to provide the TUID1, TUID2 and Descr pairs. The service itself generates the LineNum pair. The remaining pairs the site itself provides at its option.

10 The permanent-database service periodically looks at the temporary-database data and merges the information into the electronic-receipts service permanent database. It may add to the data (for example, SiteGpID) and split the data as necessary (customer payment information, for example). It also processes exceptions by logging all bad
15 data with a comment for handling at a later time.

The permanent-database service may back up and then lock the temporary database. The permanent-database service reads the first record and validates field names. (Of course, the INSERT() function for the permanent database typically performs its own field validation.) The
20 service uses the SiteID to find the SiteGpID. The service splits data apart and inserts a transaction record, creating an exception record as necessary. A payment record is inserted, again with an exception record created as necessary. The service updates the log for the billing system.

If the table is not locked, the record is deleted and the service
25 moves on to the next record. If the table is locked, the service clears the table at the end of the merge.

In an alternative embodiment, the permanent-database service again backs up and then locks the temporary database. The service uses the SiteID to find the SiteGpID. The service splits data apart
30 (Trans and Payment). The service runs an INSERT() or BATCH_MERGE() against the temporary table into the split-data tables, with exceptions

recorded as necessary. The temporary table is then cleared. This alternative embodiment has the advantage of speed.

-- The Electronic-Receipts Search Service

5 The search service allows an electronic-receipts-service user to search the electronic receipts data base. The search service handles presentations to the user. Broadly speaking, the search service involves all that the user sees and interacts with.

10 A user logs in before using the electronics-receipt service. This allows the electronics-receipt service to authorize, authenticate and validate the user. Once logged in, the service determines the user's role and routes the user routed to the appropriate pages.

-Electronic Advertising and Market Research

15 The TC **200, 300** displays graphical content (including targeted advertising) to customers. This may include dynamic offers for goods that a consumer may purchase and have shipped to his home. The data farm **140's** access to purchasing data by line item or demographics enables the farm **140** to target content to a particular consumer.

20 The TC **200, 300** engages the customer to extract information such as customer-survey responses.

At the other end, namely, at the computer **190**, the electronic-receipts or secure internet-vault services may display content (including graphics and targeted advertising) to the consumer. A service may target
25 the content based upon the consumer's demographics, stated preferences, purchasing history or inventory of documents in the secure internet vault, based upon any method for determining that particular information is more likely to be relevant to the consumer than other information or based upon consumer-ignorant methods, including random
30 selection.

Merchants and advertisers may subsidize the cost of the

electronic-receipts and secure internet-vault services, although a service may assess a consumer a fee for storing data above a predetermined amount. Also, a service may charge network access fees —monthly, for example — or per-transaction service fees.

5

- The Secure-Internet-Vault Service

A consumer may register for advance notice of special events or for reminders of special occasions. "Special events" are events of which the consumer would typically not have knowledge, while "special occasions" are dates which the consumer supplies to the service. The service may remind the customer of a special occasion, and given the type of occasion (birthday, graduation, twenty-fifth anniversary, for example), recommend gifts for the occasion.

A consumer may register to receive bids from merchants desiring to sell to the consumer. For example, where the consumer maintains his automobile insurance policy in the secure internet vault, the service may note its expiration date, type of vehicle, address, age of driver(s) and other profile information. With the consumer's permission, the service provides this profile information to interested insurers who then provide bids to the consumer. The consumer then may select from the resulting bids. (Of course, the consumer can manually provide profile information. The operator of the services' site may take a commission from the winning merchant.)

Prior-art services represent multiple merchants and permit a consumer to shop among these merchants. With the instant invention, a consumer permits the merchants to present to him, and an individual merchant determines whether it meets the consumer's buying criteria. This invention schema saves the consumer's time.

- Expanded Illustration

With the descriptions of devices and protocols given herein, a more detailed version of the illustrative overview walk-through follows: A customer of a merchant **120** enters the merchant **120**'s POS location or web site having the POS system **126**. The customer wishes to purchase a selection of the merchant **120**'s goods.

The customer presents to the merchant **120**'s sales agent the selected goods. The sales agent identifies each of the selected items, by scanning each past the bar-code scanner (not shown) in the POS system **126**, for example. The "cash-register" portion **1262** enters the UPC information of the item into its RAM. As before, the customer is buying a personal portable Walkman (tm)-type stereo.

With each item identified, the POS system **126** and the merchant data center **127** communicate over the link **128**. The "cash-register" portion **1262** presents the item's UPC information to the merchant data center **127**.

The merchant data center **127** responds with the item's description and price. The POS system **126** shows the item description and price to the customer, possibly along with a running sum of items identified so far, a running tax amount, etc, in a first area of its display. This first area is typically the display of the "cash-register" portion **1262**.

The merchant data center **127** and the data farm **140** communicate as the items are identified. The data center **127** forwards the UPC product information over the internet **180** (or other communications link) to the data farm **140**. The farm **140** determines what content graphics to show the customer buying the item with the received UPC product information (and buying any other items associated with this transaction).

The data farm **140** communicates with the TC **1261** as the items are identified. The TC-data farm communications use the internet **180**. The farm **140** relays to the TC **1261** the content it determined to show the

customer.

With the customer expected to be at the POS system **126** for 90 seconds, the data center **140** forwards to the TC **1261** a multiplicity of distinct content graphics, say, a coupon for the personal portable stereo and a coupon for batteries for the portable stereo. The data farm **140** presents these to the TC **1261** in HTML and/or Java (tm) (that is to say, some predetermined web-directed language(s)), and the TC **1261** converts the HTML/Java (tm) instructions into a (multi-)media presentation for the customer on a second area of the display. This second area is typically the display **220** of the transaction computer.

The data farm **140** may divide this second area so that multiple contents are visible to the customer simultaneously. An acceptable way of implementing these multiple sub-divisions is using frames, as is known in the web-browser art. Indeed, one frame may present content that the non-web-enabled "cash-register" portion **1262** of the POS system **126** forwards while another frame may present content that the web-enabled TC **1261** forwards.

In one embodiment, the multiple content graphics are all presented substantially simultaneously to the customer. In another embodiment, subsets of the multiple content graphics are presented over time. (The POS system shows each subset for a predetermined period of time.) In the degenerate case, the subsets consists of exactly one content graphics, and the multiplicity of content graphics is presented serially.

The data farm **140** may form an expectation for the amount of time the customer will spend at the iPOS platform and develop a multiplicity of content graphics accordingly. However, the data farm **140** typically will not know the actual amount of time beforehand. It may be shorter than the expected 90 seconds. In this situation, the TC **1261** may not have enough time to present all of the multiplicity of content graphics received from the data farm **140**.

On the other hand, the customer may spend longer than the

expected 90 seconds at the POS system **126**. In this situation, the TC **1261** may have more time than necessary to present to the customer all of the multiplicity of content graphics received from the data farm **140**. The TC **1261** may re-present some or even all of the multiplicity of content

5 graphics.

The information that the data farm **140** directs the TC **1261** to present may be only visual information, only audio information, or a combination of visual and audio information. Indeed, in one embodiment, the data farm **140** views the TC **1261** as a fully capable web browser and
10 directs the TC **1261** as any web content provider would direct a web browser. (A particularly useful piece of content is an attention-grabbing burst of sound – possibly with an animated visual – that draws the customer's eyes to the display of the TC **1261**.)

By an express communication or by the lack of any
15 appropriate communication, the TC **1261** informs the data farm **140** that the user has not responded to any of the content received from the farm **140** and that the transaction is continuing (that is to say, the user is still at the POS system **126**). The data farm **140** then determines that the next content to forward to the TC **1261** is, say, a survey question or a series of survey
20 questions from the merchant **120** or from the manufacturer **130** regarding consumer electronics. (The farm **140** has previously received the survey from the manufacturer **130**, possibly over the internet **180**, or gets it as it needs it from the manufacturer **130** or other participant **1A0** over the internet **180**.) The farm forwards the survey in the web-directed language
25 to the TC **1261**.

The TC converts the instructions from the farm **140** into a presentation for the customer. Disinclined to accept coupons but inclined to complete surveys, the hypothetical customer uses, say, the touch screen portion **531** of the TC input subsystem **530** to complete the survey
30 question(s).

As the survey is being completed or after the customer

indicates that the survey question(s) has (have) been completed (or possibly both), the TC **1261** communicates to the data farm **140** the consumer's response to the survey results. The farm **140** may alter any subsequent presentation of graphics content to conform with the response
5 it received.

For example, the customer may have indicated on the survey that he is interested in new personal-stereo technologies. The data farm **140** forwards to the TC **1261** an advertisement for an MP3 player and for a DAT player. The TC **1261** displays these advertisements in the second area
10 **220** of its display.

All the while, the sales agent continues to identify items for purchase into the system **100**. Where, for example, the agent identifies a large pack of batteries subsequent to identifying the personal stereo, the data farm **140** may determine that content regarding a coupon for
15 batteries is inappropriate. The farm **140** then re-instructs the TC **1261** not to display the content for batteries previously forwarded.

The graphics content encourage the customer to select the coupon by touching an area of the screen of the TC **1261** (or otherwise indicate consent).

20 After the sales agent has identified all of the items that the customer selected and the POS system **126** has displayed the transaction summary, including a total, the customer presents a form of payment. Where the payment is a credit card, the customer swipes the card through the transaction computer and signs electronically, allowing the TC to
25 capture his signature. The POS system **126** forwards the captured electronic signature to any of the merchant data center **120**, the optional partner data center **130**, the data farm **140** and participants **1A0**, directly or through forwarding.

Where the customer presents an electronic-funds-transfer card
30 for payment, he swipes the card through the TC of the POS system **126** and enters his validating PIN number.

After the form of payment has been accepted, the POS system asks the customer whether he would like a printed receipt, informing the customer that the merchant **120** will maintain an electronic receipt available to the customer at all times, regardless of the customer's
5 preference for a printed receipt.

Later, while using the computer **190**, the consumer may visit a website enabling him to retrieve, view, verify and correct his transactions (physical or virtual). The consumer may access the receipt for the above transaction in order to initiate a charge dispute, download it into a personal
10 finance application, return an item, report taxes, etc. The consumer's choice of websites includes the website of the merchant **120** and the website of the electronic-receipts service.

The website of the merchant **120** is "hot linked" to that of the electronic-receipts service: Clicking on a link (or entering the URL) for the
15 merchant **120**'s electronic-receipts service sends the consumer onto the website of the electronic-receipts service of the data farm **140**. Some information as to how the consumer came to be on the electronic-receipts service website comes along with the consumer. (Alternatively, the merchant website may provide forms for the consumer to complete and
20 submit the forms for the electronic-receipt service to process and provide a response, unbeknownst to the consumer.)

One piece of that information is the identity of the merchant from whose website the consumer came. The electronic-receipts service uses this merchant-identity information to limit the activities of the consumer
25 to activities related to the identified merchant – or, at the least, to activities not related to competitors. For example, the consumer may view receipts of his transactions with the identified merchant, may get refunds from the identified merchant, may re-order items from the identified merchant and may order parts or accessories for a selected item, but the consumer may
30 not view receipts of transactions with merchants in competition with the identified merchant, cannot get refunds from these competitors and

cannot re-order items from these competitors. Similarly, the consumer may see advertisements from the identified merchant but does not see advertisements for competitors of the identified merchant.

When the consumer comes directly to the website of the electronic-receipts service, that is to say, without arriving via a hot link, his activities are not so restricted. He may, for example, see information about (including receipts for) all of his transactions. These transactions may include transactions from a merchant A and any number of merchant A's competitors. Likewise, advertising directed to the consumer may include advertising from a merchant A and advertising from a competitor of merchant A.

The consumer optionally directs the translation of the transaction data into a format for personal-finance or spreadsheet software on his personal computer **190** and downloads the transaction data onto the computer **190**. The consumer thus saves time in tracking his personal spending or in creating expense reports. (Quicken®, Microsoft Money® and Excel® are examples of personal finance and spreadsheet applications.)

While the above description of the electronic-receipts service is more from the consumer's point of view than the merchant's, a routine practitioner in the art will readily realize the invention's applications in the merchant's environment. For example, the electronics-receipt service provides benefits for the merchant as well. The service provides storage and administration of (all of the merchant's) transaction data, which data the merchant can access for its use when needed. By offering the data to the consumer, the service relieves the merchant of many customer-service tasks that it would normally need to provide.

As illustrated, the service provides the merchant an opportunity to re-market goods and services to the consumer in a very targeted manner as he accesses transaction from activities on the merchant or service's site. The merchant may sell complimentary goods and services

like warranty extensions and maintenance plans.

Indeed, the invention now being fully described, many changes and modifications that can be made thereto without departing from the spirit or scope of the appended claims will be apparent to one of
5 ordinary skill in the art.

This specification incorporates by reference all publications and patent applications mentioned herein, to the same extent if the specification had specifically and individually incorporated by reference
10 each such individual publication or patent application.

WHAT IS CLAIMED IS:

1 1. A method for storing and retrieving electronic records,
2 said method comprising:
3 creating a transaction by buying a good or service;
4 forwarding an electronic record with details of said transaction
5 to an electronic-record repository;
6 retrieving a copy of said electronic record from said electronic-
7 record repository over an internet.

1 2. The method of claim 1 wherein said step of creating
2 comprises
3 creating a transaction by buying from a physically extant
4 merchant.

1 3. The method of claim 2 wherein said step of forwarding
2 comprises
3 forwarding said electronic record to an electronic-record
4 repository containing an electronic record with details of a
5 transaction created at business other than said merchant.

1 4. The method of claim 1 wherein said step of creating
2 comprises
3 creating a transaction by buying from a virtual business.

1 5. The method of claim 4, 21 wherein said step of
2 forwarding comprises
3 forwarding said electronic record to an electronic-record
4 repository containing an electronic record with details of a
5 transaction created at business other than said merchant.

1 6. The method of claim 1 wherein said step of forwarding
2 comprises
3 forwarding to an electronic-record repository an electronic
4 record with details of said transaction, said details including one of
5 date, time, amount, merchant identification, merchant's store
6 identification, merchant's store cash-register identification,
7 merchant's cashier identification, payment type, payment card
8 number, payment-card expiration date, line items, line-item prices,
9 transaction total, transaction keys, transaction type and electronic
10 signature.

1 7. The method of claim 1 wherein said step of forwarding
2 comprises
3 forwarding an electronic record to an electronic-record
4 repository at the time of the transaction.

1 8. The method of claim 1 wherein said step of forwarding
2 comprises
3 holding said electronic record and then forwarding said
4 electronic record to an electronic-record repository at a
5 predetermined time following said transaction.

1 9. The method of claim 1, wherein said step of retrieving
2 comprises
3 retrieving a copy of said electronic record from said electronic-
4 record repository over an internet using internet-enabled software.

1 10. The method of claim 9, wherein said step of retrieving
2 comprises
3 retrieving a copy of said electronic record from said electronic-

1 record repository over an internet using a web browser.

1 11. The method of claim 9, wherein said step of retrieving
2 comprises
3 retrieving a copy of said electronic record from a web site
4 using a web browser.

1 12. The method of claim 9, wherein said step of retrieving
2 comprises
3 using a web browser to log onto a website hosting said
4 electronic-record repository; and
5 retrieving a copy of said electronic record from said web site
6 using a web browser.

1 13. The method of claim 1, wherein before said step of
2 retrieving, the following step is performed:
3 searching for said electronic record on said electronic-record
4 repository over an internet.

1 14. The method of claim 1, wherein said step of creating
2 comprises
3 buying from a merchant and
4 wherein said step of retrieving is performed on behalf of said merchant.

1 15. The method of claim 1, wherein said step of creating
2 comprises
3 buying from a physically extant merchant and
4 wherein said step of retrieving is performed on behalf of said merchant.

1 16. The method of claim 1, wherein said step of creating

1 comprises
2 buying from a virtual business and
3 wherein said step of retrieving is performed on behalf of said merchant.

1 17. The method of claim 1, wherein said step of creating
2 comprises
3 selling to a buyer and
4 wherein said step of retrieving is performed on behalf of said buyer.

1 18. The method of claim 1, wherein said step of creating
2 comprises
3 selling to a buyer at a physically extant merchant and
4 wherein said step of retrieving is performed on behalf of said buyer.

1 19. The method of claim 1, wherein said step of creating
2 comprises
3 selling to a buyer at a virtual business and
4 wherein said step of retrieving is performed on behalf of said buyer.

1 20. The method of claim 1, wherein said step of retrieving is
2 performed on behalf of a third party to said transaction.

1 21. The method of claim 1, wherein said step of retrieving
2 comprises
3 one of downloading, printing, faxing and e-mailing a copy of
4 said electronic record.

5
6 22. The method of claim 1, further comprising the step of
7 then using said electronic record as proof of said transaction.

1 23. The method of claim 22 wherein said step of using
2 comprises
3 then using said electronic record as proof of said transaction in
4 order to dispute an alternative record of said transaction.

1 24. The method of claim 22 wherein said step of using
2 comprises
3 then using said electronic record as proof of said transaction in
4 order to return said good.

1 25. The method of claim 22 wherein said step of using
2 comprises
3 then using said electronic record as proof of said transaction in
4 order to exchange said good.

1 26. The method of claim 22 wherein said step of using
2 comprises
3 then using said electronic record to file a warranty claim with
4 respect to said good.

1 27. The method of claim **1**, further comprising the step of
2 viewing said electronic record.

1 28. The method of claim **1** wherein said step of retrieving
2 comprises
3 offering a discount as an after-purchase promotion, optionally
4 dependent on the credit card used for said transaction, the date of
5 said transaction or the date of said retrieval.

1 **29.** A method for storing and retrieving electronic records,
2 said method comprising:

1 creating a transaction by buying a good or service from a
2 physically extant merchant;

3 forwarding an electronic record with details of said
4 transaction, said details including one of date, time, amount,
5 merchant identification, merchant's store identification, merchant's
6 store cash-register identification, merchant's cashier identification,
7 payment type, payment card number, payment-card expiration
8 date, line items, line-item prices, transaction total, transaction keys,
9 transaction type and electronic signature to an electronic-record
10 repository containing an electronic record with details of a
11 transaction created at business other than said merchant;

12 using a web browser to log onto a web site hosting said
13 electronic-record repository;

14 then searching for said electronic record on said electronic-
15 record repository over an internet;

16 using a web browser to retrieve a copy of said electronic
17 record from said website on behalf of one of the following: said
18 buyer, said merchant or a third party to said transaction and
19 performing one of downloading, printing, faxing and e-mailing a
20 copy of said electronic record; and

21 then using said electronic record as proof of said transaction in
22 order to dispute an alternative record of said transaction or return or
23 exchange said good.

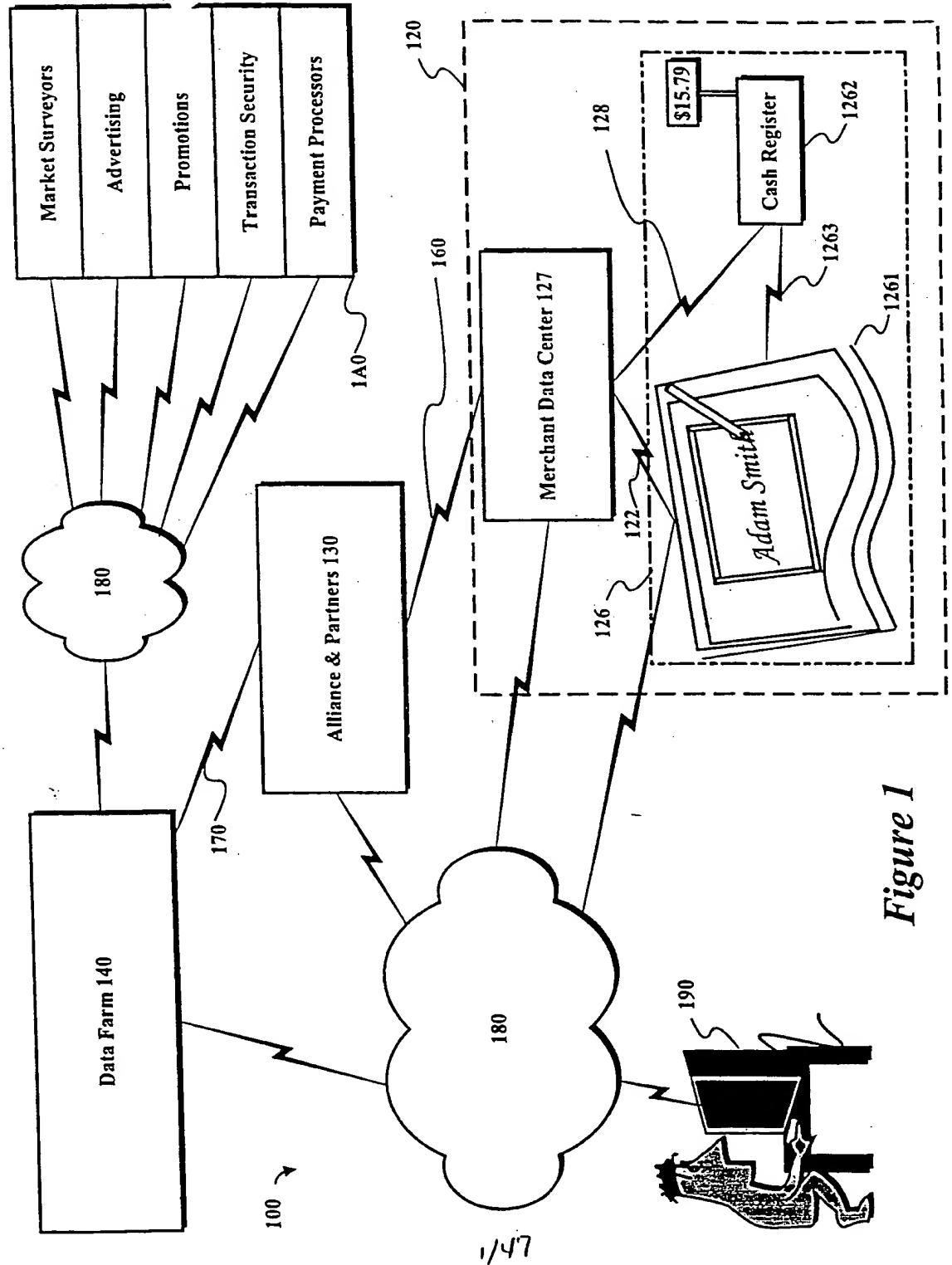


Figure 1

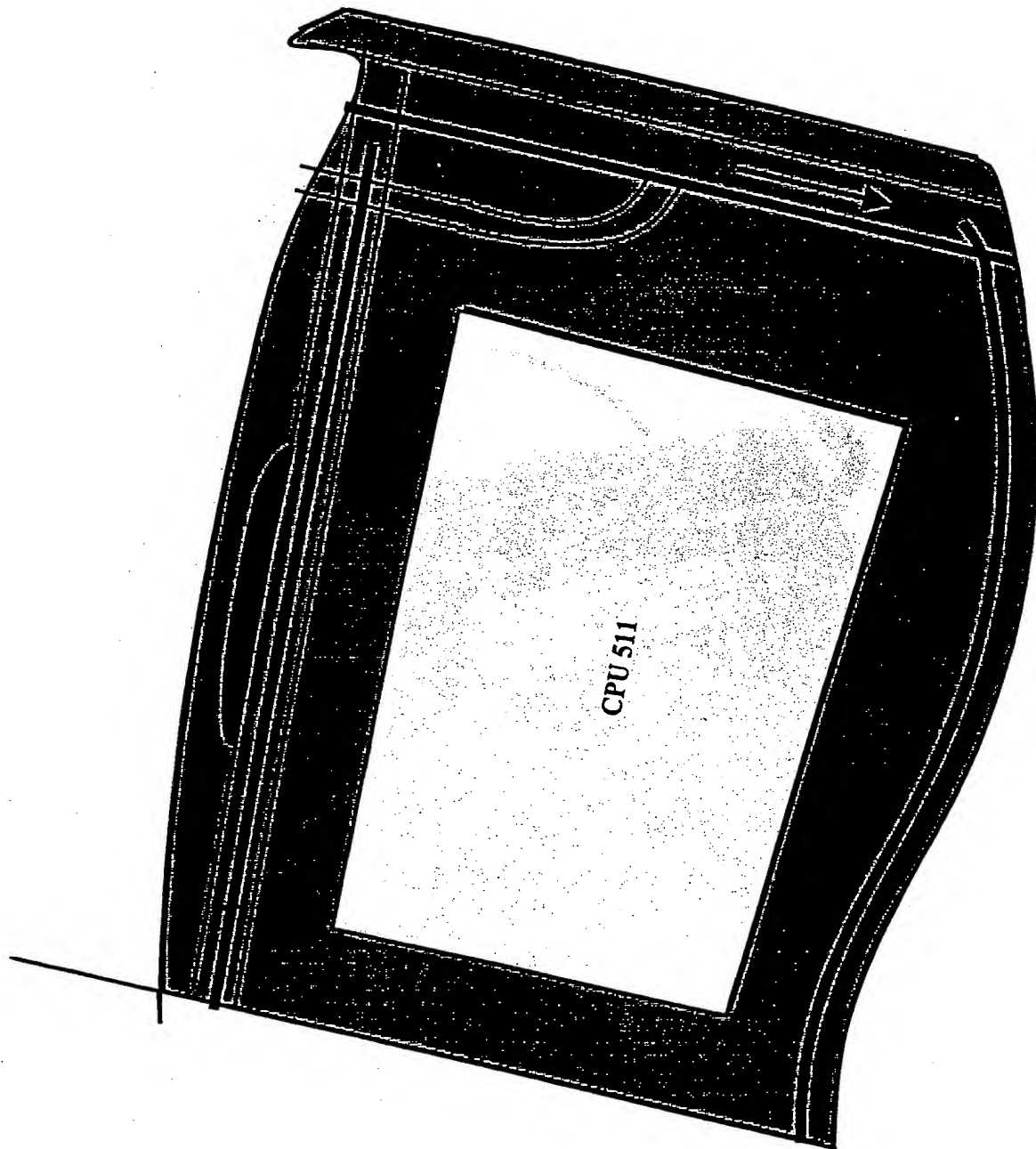


Figure 2

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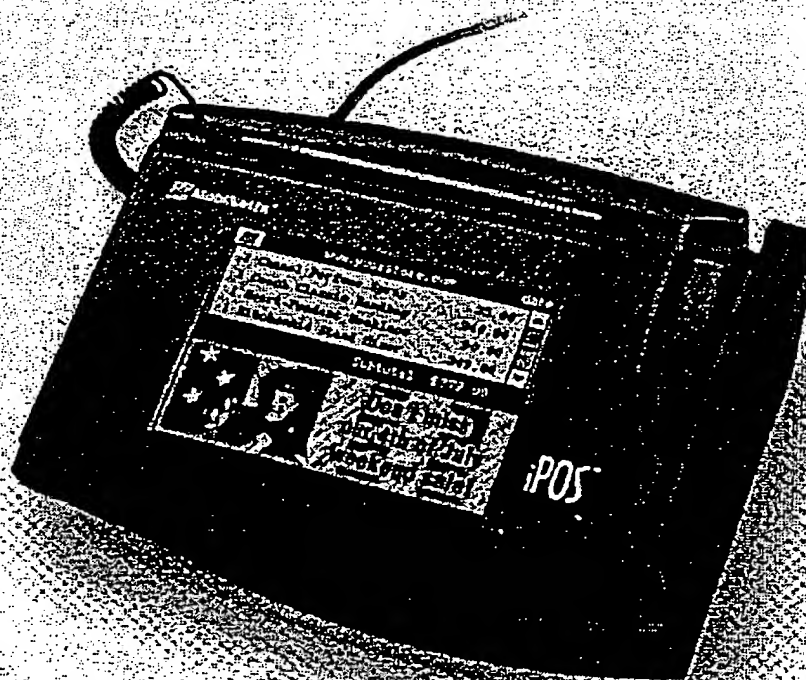
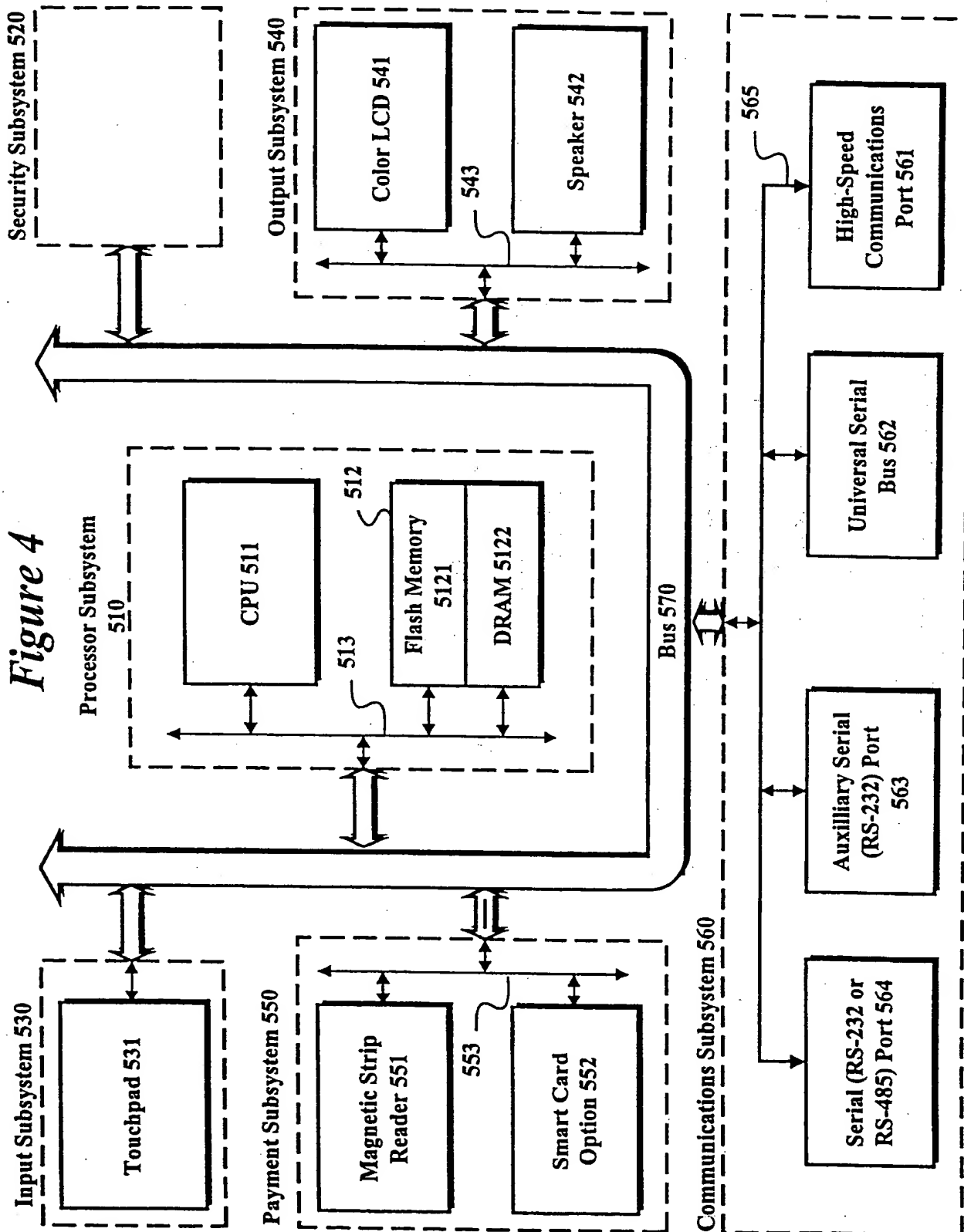
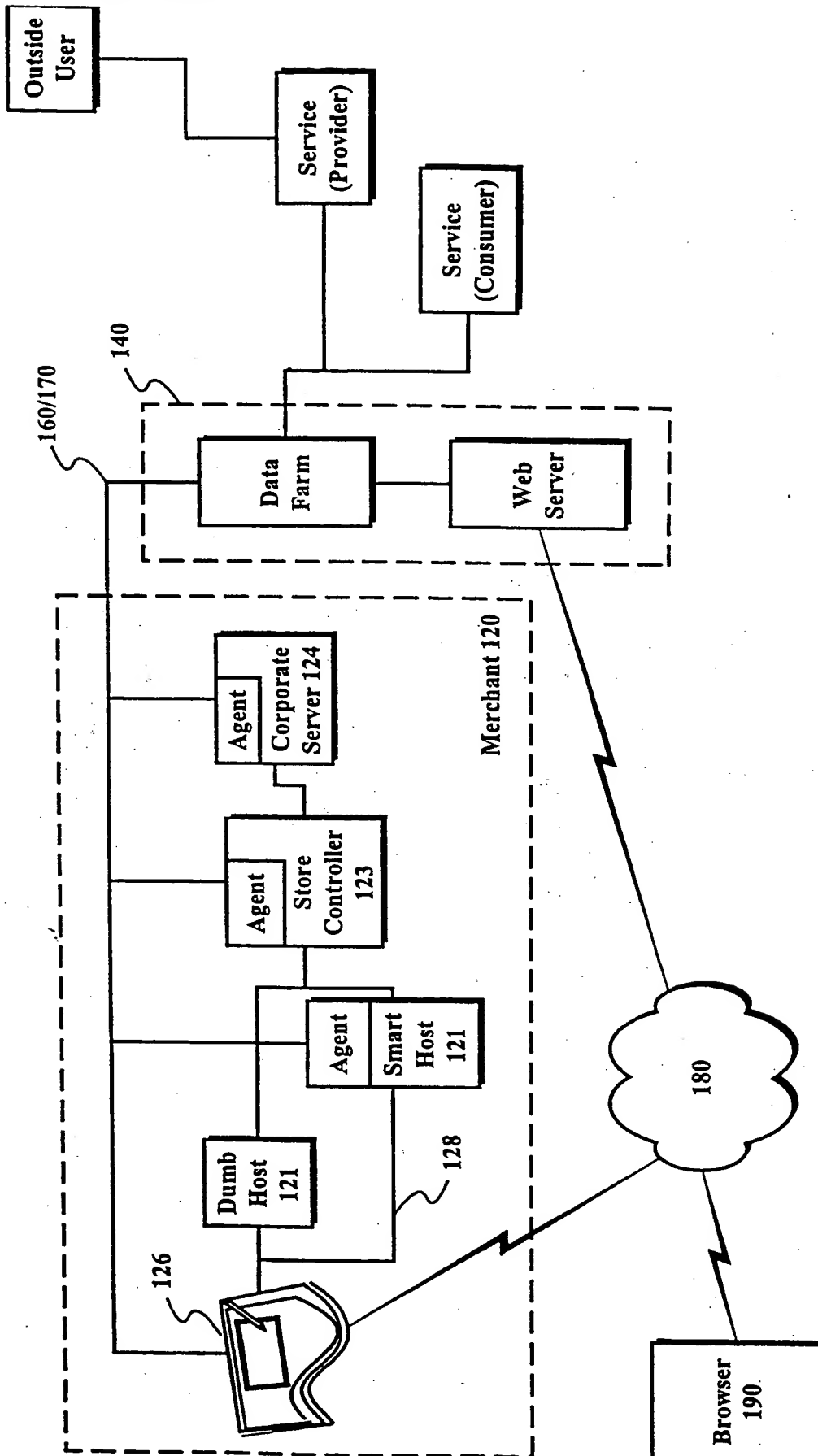


Figure 3
3/47

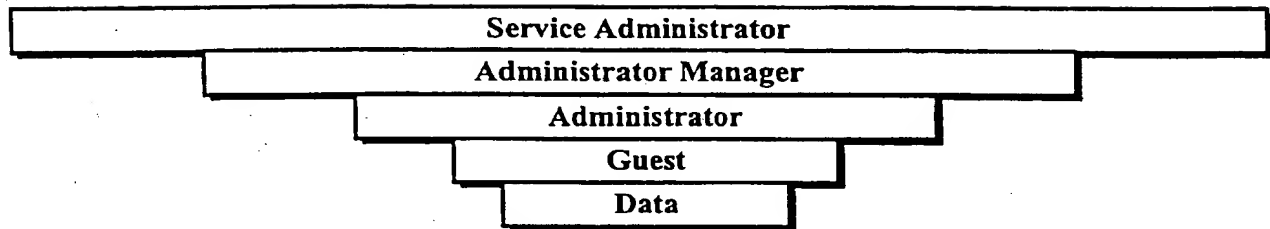
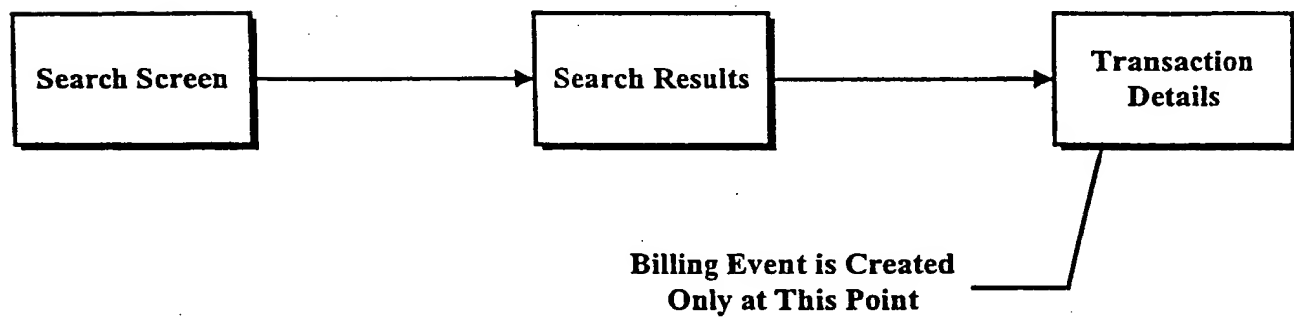


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Figure 5



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*Figure 6**Figure 7*

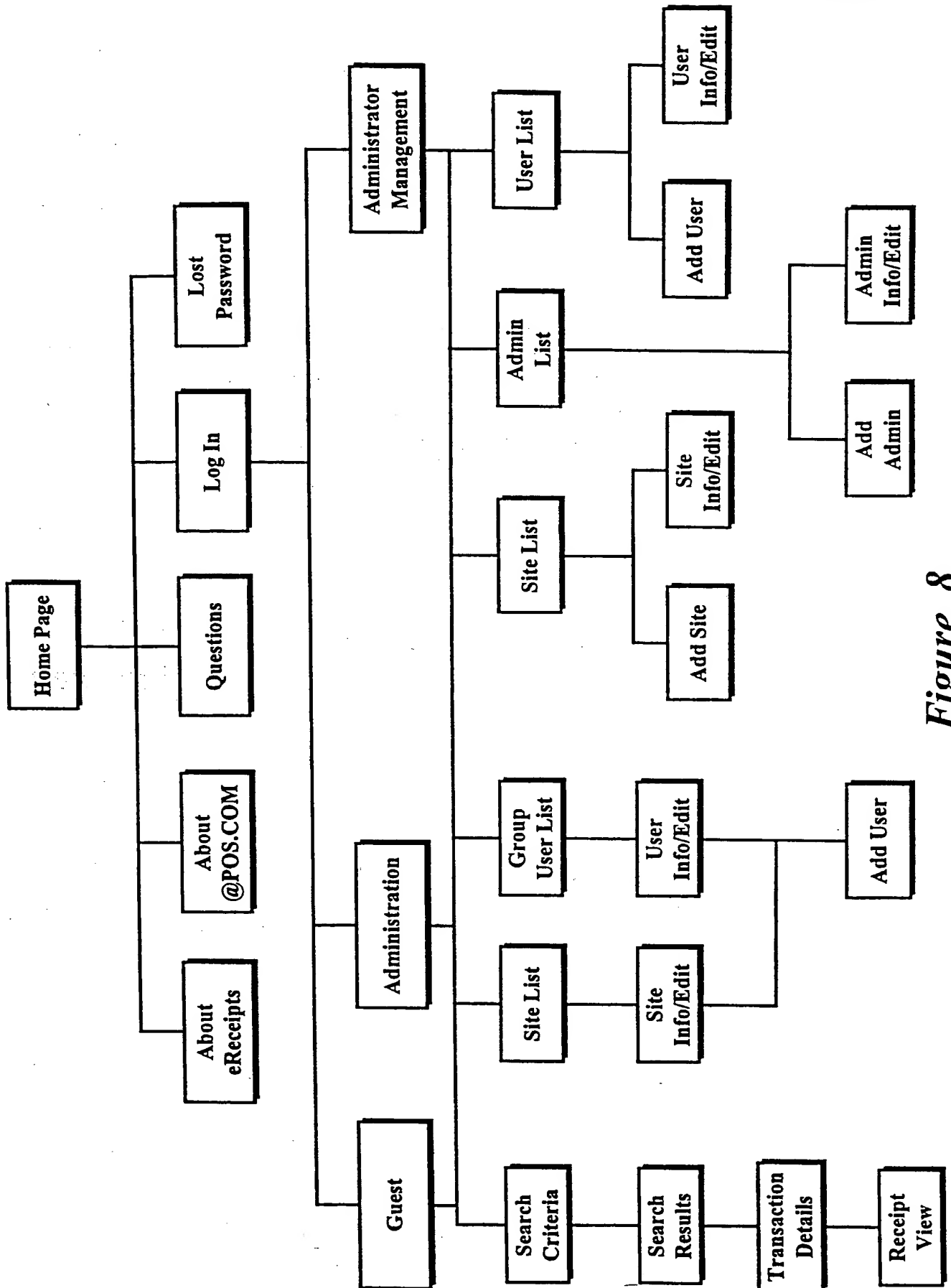


Figure 8

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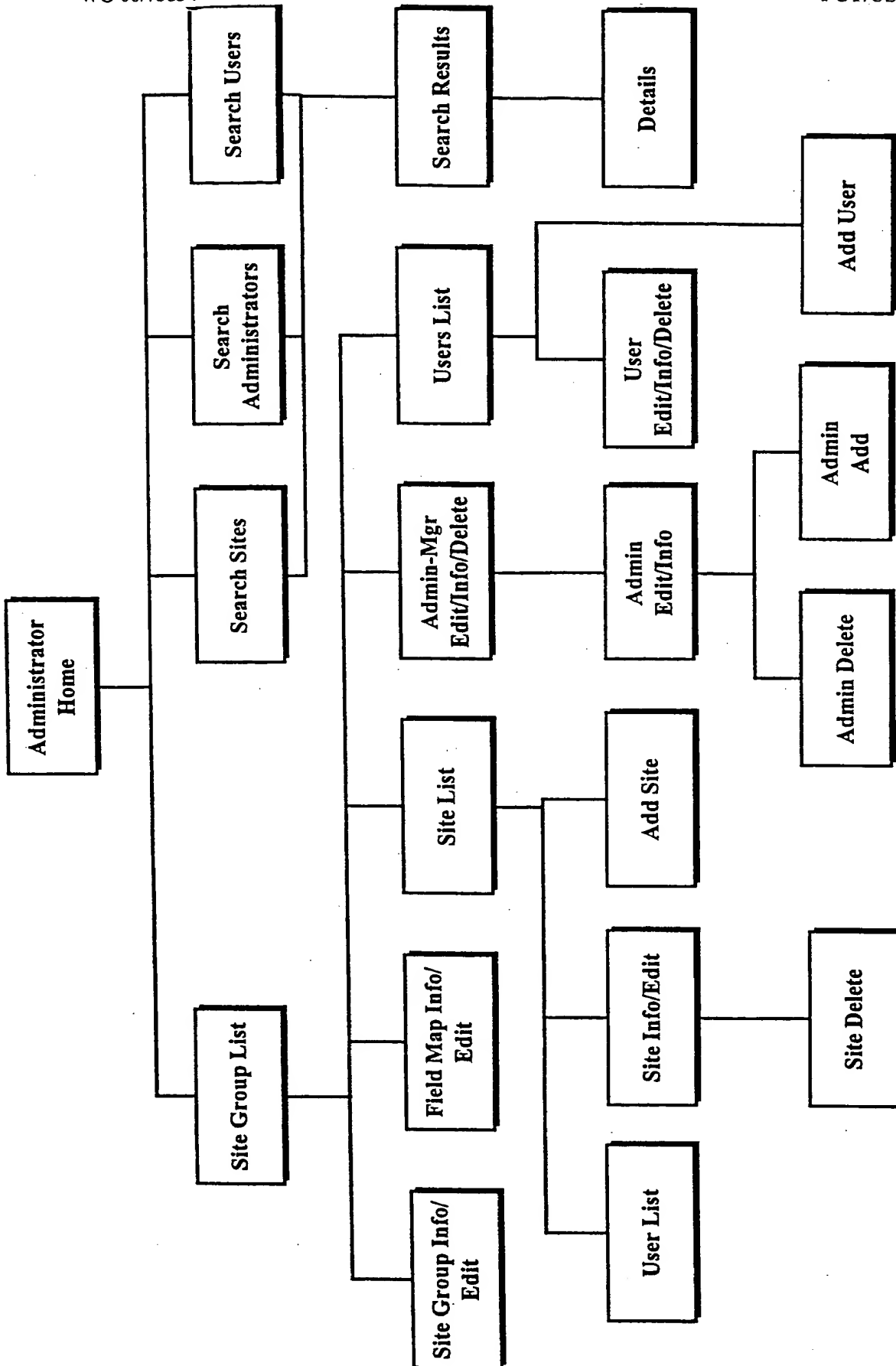


Figure 9

8 147

APPENDIX

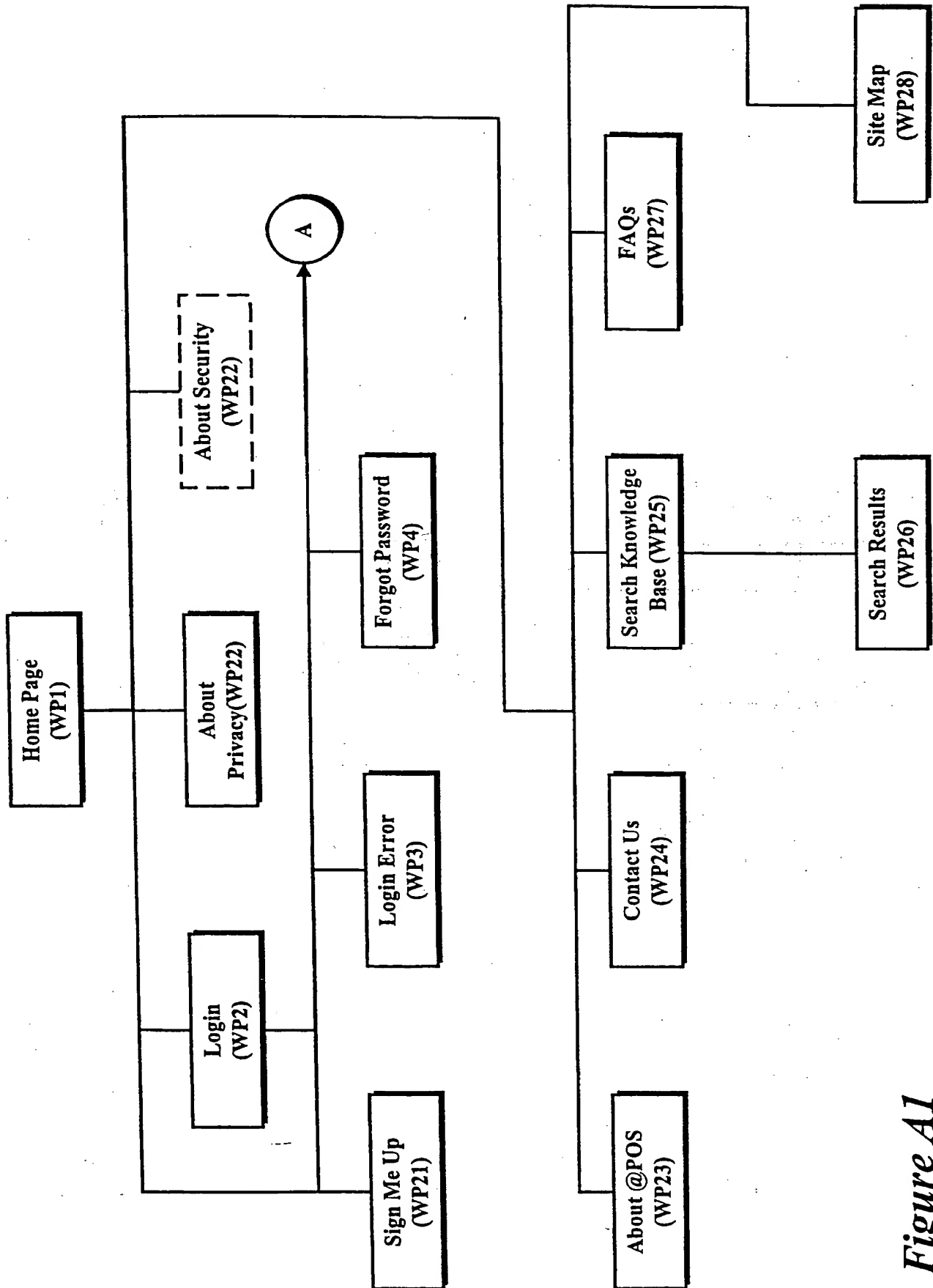
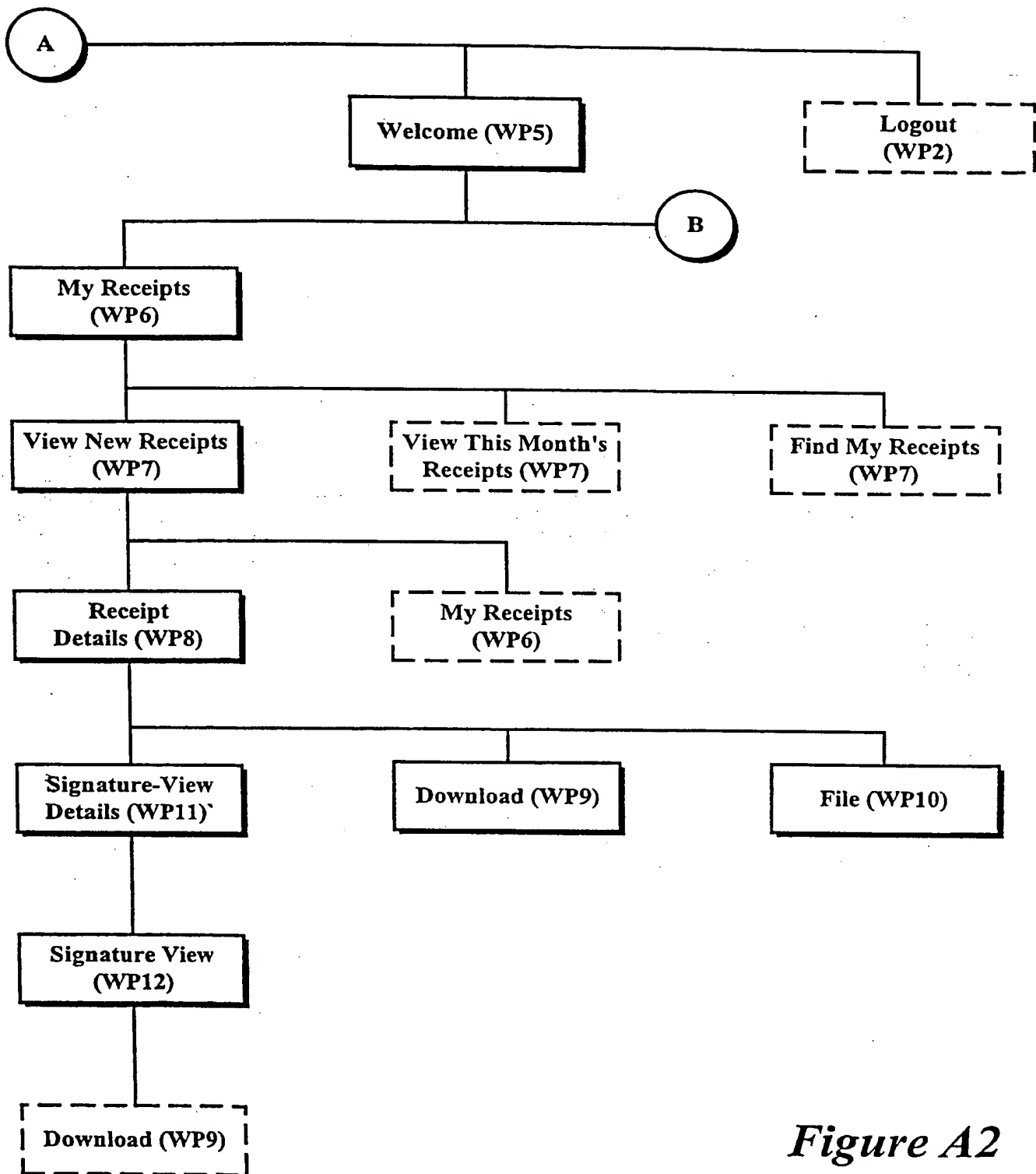


Figure A1

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*Figure A2*

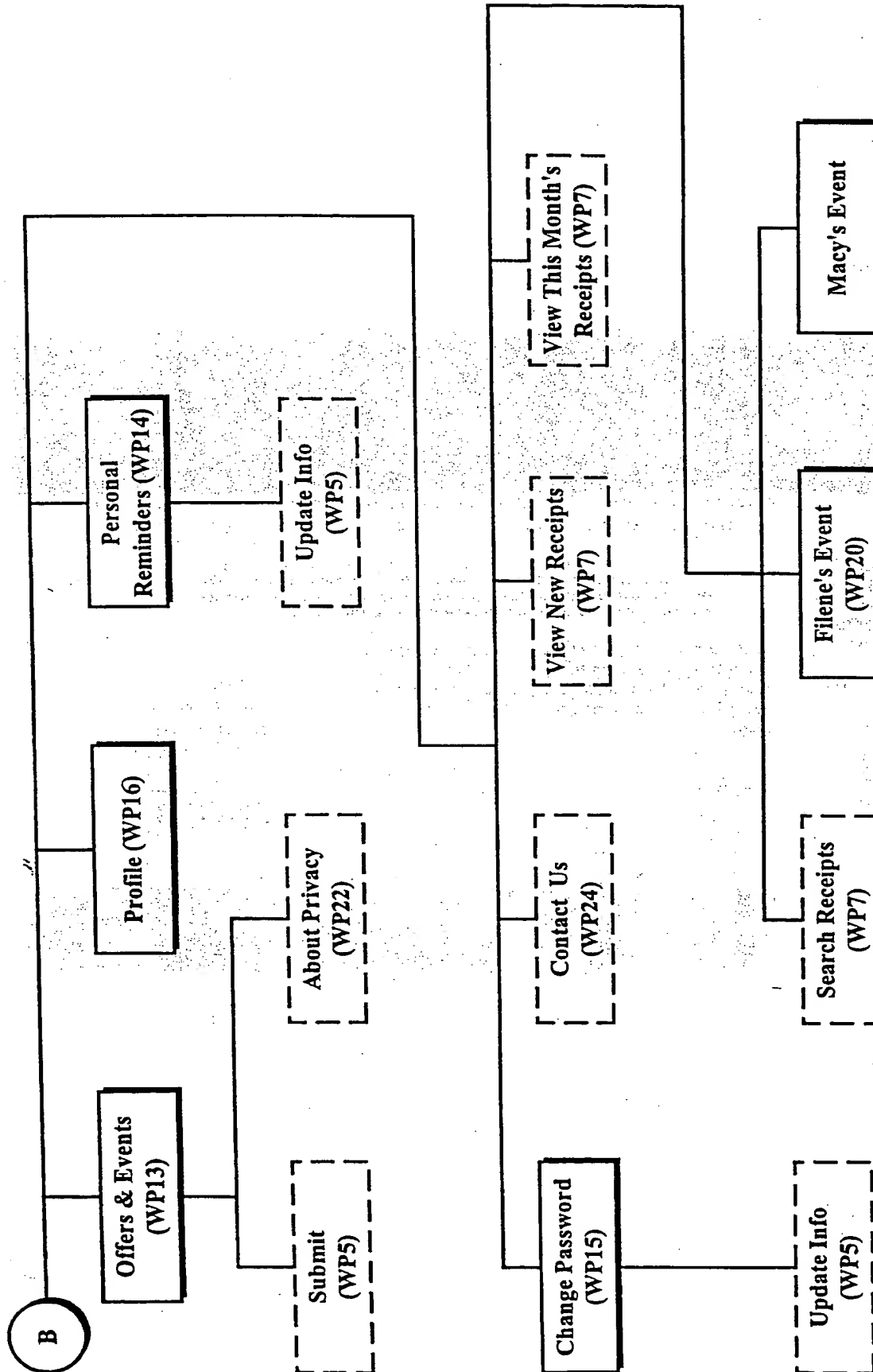


Figure A3

www.receiptcity.com

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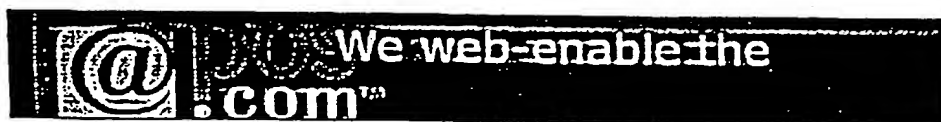
Welcome to ReceiptCity, the web's leading site for electronic receipts (e-receipts) and your personal e-receipts vault. At this site you can,

- Store and quickly find your e-receipts and register your favorite cards
- Download transaction data into leading Personal Finance applications such as Quicken
- View original receipt images if you have questions about a purchase
- See special offers designed to save you time and money

With ReceiptCity, you'll never misplace important receipts again. ReceiptCity is currently working with leading retail stores, online merchants and other companies to send receipts to ReceiptCity for you to access.

By signing up now, you can ensure your receipts are identified as these merchants come online later this year. By signing up, you can also tell us which retailers and online merchants you'd like to get e-Receipts from here.

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[Sign Up Now](#)
[Why Sign Up?](#)
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[Ensuring Security](#)



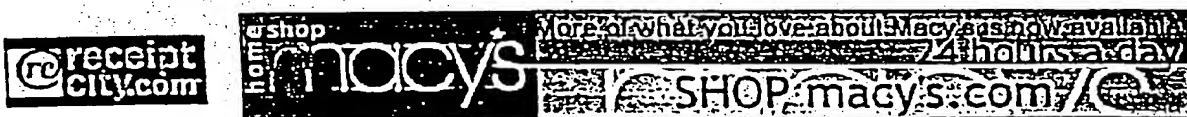
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Figure WP1

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start.asp at www.receiptcity.com (secure Web ...

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[FAQs]
[Site Map]

View My Receipts and Special Offers

New User?

[SIGN ME UP]

User name

Password

[ENTER][Forgot Your Password?](#)

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Figure WP2

1447

start.asp?error=e1 at www.receiptcity.com (se...

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View My Receipts and Special Offers

Could not log you in. Wrong user name or password!

New User?

[SIGN ME UP]

User name

Password

[ENTER]

[Forgot Your Password?](#)



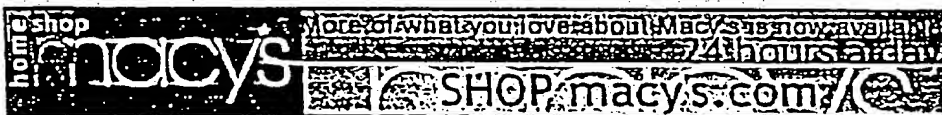

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Figure WP3


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ForgotPassword.asp at www.receiptcity.com (se...

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Powered by:


Lost Password

User Name




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Figure WP4

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loggedin.asp at www.receiptcity.com (secure W...

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My Main Page | Logout


Welcome: Chris

[View New Receipts](#) [View This Month's Receipts](#) [Search Receipts](#)

Events

[A large shipment of suits just arrived at Filene's Basement](#)
[Macy's White Sale](#)

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*Figure WP5*

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searchman.asp at www.receiptcity.com (secure ...

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Receipt Search

[View New Receipts](#)[View This Month's Receipts](#)

This page allows you to find receipts by entering search criteria. Select the receipts you wish to locate.
Hint: Enter no criteria to see all of your receipts (only the first 300 will be displayed).

Merchant

Card Number

[About privacy](#)

Card Type

Date Range

On/After Month:

Day:

Year:

On/Before Month:

Day:

Year:

Receipt total

Operator Value1 Value2

Note: Value2 is only used for Between and Not Between operation

Find the receipts where any line item is filed under the following category:

Receipt
Category**[FIND MY RECEIPTS]**

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Figure WP6

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search.asp at www.receiptcity.com (secure Web...

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POWERED BY:



Results

View Details	Date	Card Number	Total	Store Number	Description	Card
Receipt	1999/05/22	*****7003	\$6.08	41806	Texaco	Visa
Receipt	1999/05/13	*****7003	\$14.14	25825	Texaco	Visa
Receipt	1999/05/24	*****7003	\$12.48	48272	Texaco	Visa
Receipt	1999/06/03	*****3670	\$12.31	3233234	Texaco	Visa
Receipt	1999/06/24	*****7003	\$137.44		Filenes Basement	Visa
Receipt	1999/06/04	*****7003	\$49.97		Filenes Basement	Visa
Receipt	1999/05/20	*****0476	\$32.06	10	Kroger	Discov
Receipt	1999/06/05	*****7003	\$93.33		Home Repair	Visa
Receipt	1999/05/07	*****7003	\$61.09		Home Repair	Visa
Receipt	1999/06/10	*****3670	\$33.54	18	Home Repair	Visa
Receipt	1999/06/03	*****3670	\$6.07		Home Repair	Visa
Receipt	1999/06/04	*****7003	\$6.33	27	Home Repair	Visa
Receipt	1999/06/05	*****3670	\$63.30	25	Home Repair	Visa
Receipt	1999/06/10	*****7003	\$30.97	27	Home Repair	Visa
Receipt	1999/05/22	*****7003	\$118.37	13	Home Repair	Visa
Receipt	1999/05/05	*****7003	\$4.19		Home Repair	Visa
Receipt	1999/05/22	*****2000	\$31.03	230	Macy's East	Visa
Receipt	1999/05/31	*****2000	\$40.11	6441	Macy's East	Visa
Receipt	1999/05/27	*****2000	\$69.11	1203	Macy's East	Visa
Receipt	1999/06/23	*****2000	\$168.33	457	J.Miles	Visa
Receipt	1999/07/07	*****2000	\$893.05	845	J.Miles	Visa
Receipt	1999/05/15	*****0476	\$157.18		Kroger	Discov
Receipt	1999/06/06	*****0476	\$7.59	10	Kroger	Discov

[\[RETURN TO SEARCH\]](#)

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Figure WP7

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details2.asp?FIden=454188K2&RecIden=02029K1 ...

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[Contact Us]

Receipt

Date 1999/06/24 Amount \$137.44
Card Number7003
Card Title Visa
Filene's Basement
Winn & Cambridge St.
Burlington MA 02803
Tel # 781-229-2130



STR# REG# TRN# EMP#
34 004 00001703 31079

06/24/99 11:10

SALE

DEPT	ITEM	PRICE	QTY			
863	364174	\$12.99	1	N	\$12.99	Gift <input type="checkbox"/>
SADDLES LINK BRAID/B						
863	8603881	\$14.99	1	N	\$14.99	Warranty <input type="checkbox"/>
JULIANCASU/ASTPK/NDS						
850	413395	\$24.99	1	N	\$24.99	Insurance <input type="checkbox"/>
ZYLOS HERRINGBONE SO						
851	057077	\$9.50	1	N	\$9.50	Gift <input type="checkbox"/>
3PK BRIEF A JULIAN/3						
858	8655772	\$19.99	1	N	\$19.99	Expense <input type="checkbox"/>
EURO VELCR/BLACK/NDS						
874	401637	\$29.99	1	N	\$29.99	<input type="checkbox"/>
ADDLFO CORD PLY/RH						
874	8635286	\$24.99	1	N	\$24.99	<input type="checkbox"/>
NISSUEMICR/BEIGE/NDS						
Sub Total					\$137.44	
AMEX Credit Card					\$137.44	
Acct# 372214255227003						
Auth# 487884 H S 01/01						
Total					\$137.44	

[\[VIEW SIGNATURE\]](#)[\[DOWNLOAD DATA\]](#)[\[FILE IT\]](#)

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Figure WP8

20/47

Download.asp at www.receiptcity.com (secure W...

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Download To Quicken



Download To Microsoft Excel



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Figure WP9

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Filed.asp at www.receiptcity.com (secure Web ...

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- [\[Change](#)
- [Password\]](#)
- [\[Contact Us\]](#)



Successfully Filed

Your receipt has been successfully filed under the specified category.
Click your browser's back button to go back to your receipt.



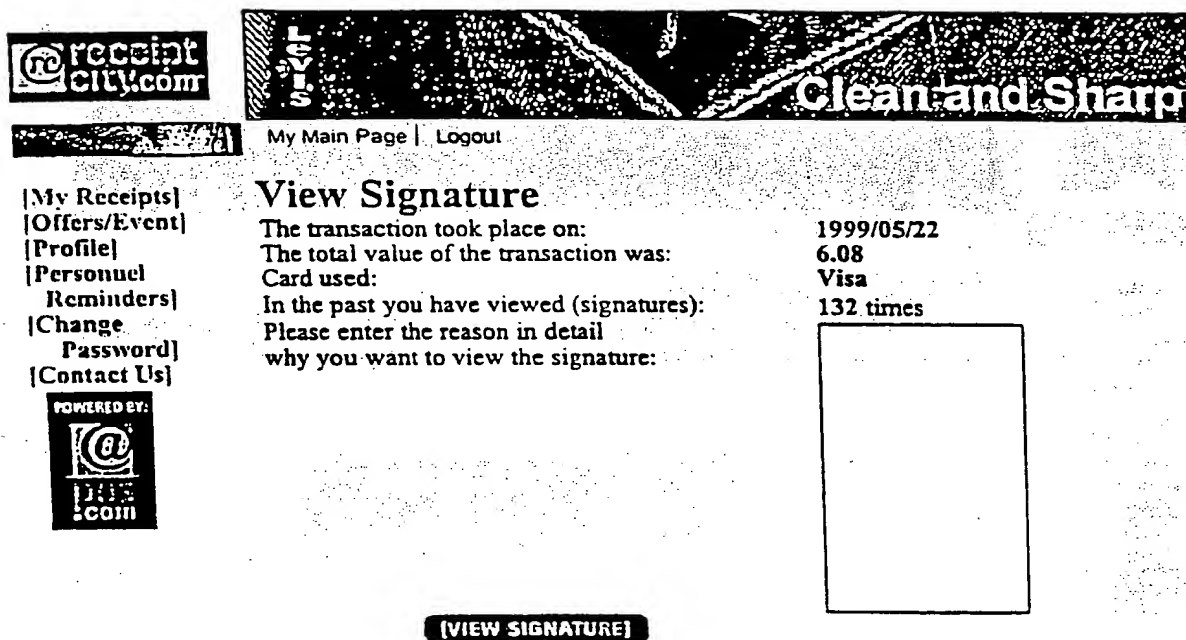
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Figure WP10

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FormSig

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The screenshot displays a website interface for receipt city.com. At the top, there is a navigation bar with links for 'My Main Page' and 'Logout'. A banner for 'Clean and Sharp' is visible. On the left, a sidebar contains links: 'My Receipts', 'Offers/Event', 'Profile', 'Personnel', 'Reminders', 'Change Password', and 'Contact Us'. Below these is a 'POWERED BY' logo for '100% .COM'. The main content area is titled 'View Signature' and contains the following text: 'The transaction took place on: 1999/05/22', 'The total value of the transaction was: 6.08', 'Card used: Visa', 'In the past you have viewed (signatures): 132 times', and 'Please enter the reason in detail why you want to view the signature:'. A large empty rectangular box is provided for the reason. At the bottom of the main content area, there is a button labeled '[VIEW SIGNATURE]'.

receipt city.com

My Main Page | Logout

View Signature

The transaction took place on: 1999/05/22
The total value of the transaction was: 6.08
Card used: Visa
In the past you have viewed (signatures): 132 times
Please enter the reason in detail why you want to view the signature:

[VIEW SIGNATURE]

Figure WP11

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Details3.asp at www.receiptcity.com (secure W...

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[\[Contact Us\]](#)



Receipt

Date 1999/06/24 Amount \$137.44
 Card Number
 Card Title Visa
 Filene's Basement
 Winn & Cambridge St.
 Burlington MA 02803
 Tel # 781-229-2130

STR# REG# TRN# EMP#
 34 004 00001703 31079

06/24/99 11:10

SALE

DEPT	ITEM	PRICE	QTY		
863	364174	\$12.99	1	N	\$12.99
SADDLES LINK BRAID/B					
863	8603881	\$14.99	1	N	\$14.99
JULIANCASU/ASTPK/NDS					
850	413395	\$24.99	1	N	\$24.99
ZYLOS HERRINGBONE SO					
851	057077	\$9.50	1	N	\$9.50
3PK BRIEF A JULIAN/3					
858	8655772	\$19.99	1	N	\$19.99
EURO VELCR/BLACK/NDS					
874	401637	\$29.99	1	N	\$29.99
ADDLFO CORD PLY/RV/H					
874	8635286	\$24.99	1	N	\$24.99
NISSUEMICR/BEIGE/NDS					
Sub Total					\$137.44

AMEX Credit Card \$137.44
 Acct# 372214255227003
 Auth# 487884 H S 01/01

Total \$137.44

I agree to pay the above total

[DOWNLOAD DATA]

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Figure WP12

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EditServices.asp at www.receiptcity.com (secu...

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Offers

[Click here to view our privacy policy](#)

Here is where you tell us more about the type of products you are interested in purchasing. Please select the following item categories for merchant notices you can see when you visit ReceiptCity.

You can also enter the specific brands you are interested in - for multiple brands please separate these by comma, for example, "Nike, Adidas". I am interested in:

☒ Please also notify me of the following offers and events by e-mail.

☐ Formalwear (Tuxedos and Gowns)

☒ Activewear

☒ Lingerie

☐ Jewelry

☐ Chocolate and Gift Baskets

☐ Fragrances

☐ Housewares

☐ PC's, Cameras, Consumer Electronics

☐ Music and Videos

☐ Toys and Games

☐ Sporting Goods

☐ Suits and Business Attire

☒ Shoes

☒ Accessories

☐ China and Crystal

☐ Cosmetics

☐ Bath & Body

☐ Appliances

☐ Software

☐ Books

☐ Camping and Outdoor

☒ Food

Events

Please tell us what special events you would like to be notified of when you visit..

☐ Annual Sale

☐ Seasonal Sale

☒ Semi-annual Sale

☒ Other Sales Events

[SUBMIT] [RESET]

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Figure WP13

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EditMessages.asp at www.receiptcity.com (secu...

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Personal Reminders

Please fill in following information so that we remind you of the special events.

Event	Date (mm/dd/yyyy)	Name	Prior Weeks
	8 / 8 / 2001	Senthil Kumara	1
	12 / 25 / 2000	The Big Guy	1
Anniversary	1 / 1 / 2004	1234	1
Engagemen	1 / 1 / ALL		1
Retirement	1 / 1 / ALL		1
Going Away	1 / 1 / ALL		1
Graduation	1 / 1 / ALL		1

[\[UPDATE INFO\]](#)
[\[RESET\]](#)

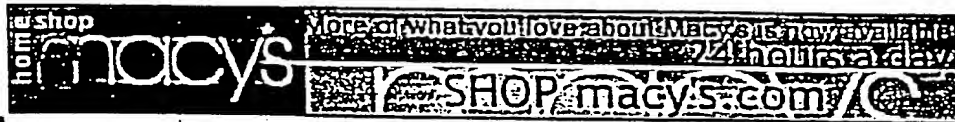
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Figure WP14

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ChangePassword.asp at www.receiptcity.com (se...

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[\[Change Password\]](#)
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Change Password

* Current Password:

* New Password:

* Re-Type New Password:

New Password Reminder:

[\[UPDATE INFO\]](#) [\[RESET\]](#)

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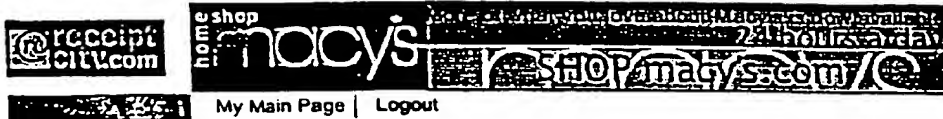
Figure WP15

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Edit Profile

Figure WP16A

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Profile

Here is where you tell us more about yourself and how to identify your receipts with our participating merchants (what frequent shopper and credit cards you use when you shop).



* First Name: Chris
 Middle Initial: A
 * Last Name: Smith
 Birthdate : Month: 6 Day: 26 Year: 1960
 * EMail Address: cSmith@mobinetix.com
 Street Address 1: 1234 Main Street
 Street Address 2:
 * City: Sunnyvale
 * State: CA
 Country: USA
 * Zip Code: 94086

* Required fields

- ☒ Please send me updates about new ReceiptCity services by e-mail
☒ When new merchants join ReceiptCity and make their receipts available, automatically add my past receipts with these merchants for me.
(Note: if you do not select this, only receipts for transactions that you approve during the purchase at the point of sale will be added.)

Cards

Please tell us what frequent shopper cards and credit cards you typically shop with. We will ONLY use this to identify your receipts and securely store them here for you. This will not be used for purchases or shared with third parties.

Click here to view our privacy policy
 Why this is safe and secure

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Figure WP16B

Edit Profile

Page 2 of 2

For successful registration, at least one account card must be specified.

Note: This is a secure page: the information you enter will be encrypted for transmission to our secure data center

Account Number	Name On Card	Account Type	Merchant *
43752000006704	Chris Smith	Master Card	<input type="checkbox"/> none <input checked="" type="checkbox"/>
37221425522700	Chris Smith	AMEX	<input type="checkbox"/> none <input checked="" type="checkbox"/>
34576892000	C Smith	Frequent Shopper	<input checked="" type="checkbox"/> Macys <input type="checkbox"/>
54207277322136	Chris M Smith	Master Card	<input type="checkbox"/> none <input checked="" type="checkbox"/>
1234567890	Chris Smith	VISA	<input type="checkbox"/> none <input checked="" type="checkbox"/>

* Merchant applies to only frequent shopper cards.

Cash receipt identifier code:

0123456789

Please enter a unique numeric identifier up to 11 digits. For example, this may be your phone number, driver's license, or a combination of phone number and plus last four digits of your social security number. You will be prompted for this identifier at the point of sale if you want an electronic receipt for specific cash transaction.

[Continue]

[Reset]

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details2.asp?FiIden=47177K2&RecIden=01442K1 a...

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Receipt

Date 1999/05/20 Amount \$32.06
 Card Number0476
 Card Title Discover KROGER

SUNGOLD DRNK	B	\$1.19	
SPRITE	B	\$1.29	
JELLO PDDNG	B	\$2.29	
CLR RCH N/E	T	\$1.35	
WRIGLEY GUM	B	\$0.79	
COKE	B	\$1.29	
**** TAX .51 BAL		11.71	
1 @ 3/1.00			
HERSHY CANDY	B	\$0.34	
**** TAX .52 BAL		12.06	
VF DEBIT		32.06	

 KROGER DUNWOODY
 2090 Dunwoody Club Drive
 Atlanta Georgia 30350
 DEBIT PAYMENT
 **32.06 XXXXXXXXXXXXX0476 0103
 REF # 000000

5/20/99 22:02 0324 10 0121 121

CHANGE 20.00

GA 7% TAX A .30
 GA 3% TAX C .22
 TOTAL TAX .52

TOTAL NUMBER OF ITEMS SOLD = 7

5/20/99 10:02 0324 10 0121 121

Total \$32.06

[\[VIEW SIGNATURE\]](#)[\[DOWNLOAD DATA\]](#)[\[FILE IT\]](#)

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Figure WP17
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EditMessages.asp at www.receiptcity.com (secu...

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My Main Page | Logout

[\[My Receipts\]](#)
[\[Offers/Event\]](#)
[\[Profile\]](#)
[\[Personnel Reminders\]](#)
[\[Change Password\]](#)
[\[Contact Us\]](#)



Personal Reminders

Please fill in following information so that we remind you of the special events.

Event	Date (mm/dd/yyyy)	Name	Prior Weeks
	8 / 8 / 2001	Senthil Kumara	1
	12 / 25 / 2000	The Big Guy	1
Anniversary	1 / 1 / 2004	1234	1
Engagemen	1 / 1 / ALL		1
Housewarm	1 / 1 / ALL		1
Wedding	1 / 1 / ALL		1
Other	1 / 1 / ALL		1

[\[UPDATE INFO\]](#)
[\[RESET\]](#)

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Figure WP18

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getMonth.asp at www.receiptcity.com (secure W...

Page 1 of 1



Another day to challenge YOURSELF.
How far will you go?



[My Main Page](#) | [Logout](#)

[\[My Receipts\]](#)
[\[Offers/Event\]](#)
[\[Profile\]](#)
[\[Personnel](#)
 [Reminders\]](#)
[\[Change](#)
 [Password\]](#)
[\[Contact Us\]](#)

View This Months Receipts

No receipts have been found for this month

[\[RETURN TO SEARCH\]](#)



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Figure WP19

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Welcome to Filene's Basement! You Just Can't ...

Page 1 of 1



Exciting Thrill

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Document:
Microsoft Word Format
Adobe Acrobat (PDF) Format

Figure WP20

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Register.asp at www.receiptcity.com (secure W...

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[\[Knowledge Base\]](#)
[\[FAQs\]](#)
[\[Site Map\]](#)



Sign Me Up!!!

Join ReceiptCity now to start collecting your receipts and get special notices about valuable savings from participating merchants. [Click here to see our privacy policy](#)

To sign up, you'll need to assign yourself a User Name and Password, then let us know a lit about who you are, what frequent shopper and credit cards you typical shop with and what kind of products you're interested in.

Your ReceiptCity Log-In

Please create a User Name and Password for yourself.

The User Name (example "John1") and Password will be used to let you back into ReceiptCity each time you return.

Important: Be sure to write down your User Name and Password and store it in a safe place.

Please Note: Your User Name must be between 1 and 50 characters long, contain no spaces, and will be checked for uniqueness. Also, your Password must be at least 8 characters long and can not be numeric only (must contain characters from the alphabet).

*=Required

* User Name:

* Password:

* Confirm Password (Re-Type):

Password Reminder:

(A Password Reminder is a word or few words that help remind you of your password)

[\[Continue\]](#)

[\[Reset\]](#)

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Figure WP21

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[\[FAQs\]](#)
[\[Site Map\]](#)



TRUSTe Licensee



@pos.com is a licensee of the TRUSTe Privacy Program and adheres to TRUSTe privacy practices. This statement discloses ReceiptCity privacy practices.

TRUSTe is an independent, non-profit privacy initiative dedicated to building users' trust and confidence on the Internet and accelerating growth of the Internet industry. The @pos.com team values your privacy, and our privacy policy has been reviewed by TRUSTe to assure full compliance with its standards.

When you visit a Web site displaying the TRUSTe trustmark, you can expect to be notified of:

- what personally identifiable information of yours is collected
- what organization is collecting the information
- how the information is used
- with whom the information may be shared
- what choices are available to you regarding collection, use and distribution of the information
- what kind of security procedures are in place to protect the loss, misuse or alteration of information under the company's control, and
- how you can correct any inaccuracies in the information

Any questions regarding this statement should be directed via email to webmaster@ReceiptCity.com. If the website does not respond to your inquiry or your inquiry is not satisfactorily addressed, please contact TRUSTe at http://www.truste.org/users/users_watchdog.html.

Privacy Statement for ReceiptCity

@pos.com publishes this privacy statement to demonstrate our firm commitment to privacy. The information gathering and dissemination practices for the ReceiptCity website are disclosed in full as follows:

Purpose of the Site

ReceiptCity is a leading Internet site for gathering and storing consumers' purchase receipts. The site provides quick and easy access to personal receipts and makes available special offers and other conveniences from participating merchants.

Information to be Gathered

Our registration form collects basic contact information (your name, address, email address), cash receipt identifiers (a string of numbers you create to identify your cash receipts at the point of sale), financial information (your frequent shopper or credit card numbers to identify your receipts), and demographic information (your zip code and age). We do not collect phone numbers. Your zip code and portions of your street address are used to verify your identity with financial credit card processing networks or merchant databases when you register for the first time at ReceiptCity.

You can also request to be reminded of special dates and items that interest you. This type of information is not required, but if you provide it, you will receive reminders of

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the dates you've selected and notices of promotions that match your interests. We share, at an aggregate level, ReceiptCity users' product interests and reminders with merchants to count the number of users interested in certain products or shopping events.

Your Internet Server Provider (ISP) address is requested to help us diagnose problems with our server and administer our Web site. ISP's, such as AOL and MindSpring, provide your connection to the Internet.

Your email address is used to send you notices of the arrival of new receipts, enhancements to ReceiptCity, and promotions that match your interests. Your e-mail address is also used, for security purposes, to confirm changes to your account profile. Whether you receive email messages is up to you. If you do not wish to receive email messages, you can indicate your preference when you register and or at anytime in the future (see the section on "Your Choices" below).

How the Site Works

At your request, participating merchants send your electronic receipts to the ReceiptCity website where they are stored with any personal data that you have already provided. The provision of your unique identifying information (user name and password) assures that you will be the only person able to view your receipts at ReceiptCity. After you register, access to your receipts is given only after supplying the correct password is provided.

Once you have registered at ReceiptCity, you can access your receipts to accomplish many useful tasks quickly. For example, while you can simply view your receipts, you can also use them to return or exchange merchandise, or make warranty claims, balance your checkbook, submit with expense reports, or download them into Intuit's Quicken. While you're visiting ReceiptCity, you will receive ads and promotions based on the purchases you've made in the past and the interests you've identified. If you request reminder service, we will send you reminders of special dates, or merchandise arrival, based on information you have provided to us.

Your use of the site is free. Site funding comes from participating merchants eager to foster customer loyalty by providing useful customer services.

Third-party Links

This website contains links to other websites. ReceiptCity has no responsibility for the privacy practices or content of other websites. We recommend that you read the privacy statements posted on these sites.

Advertising

We use an outside ad serving company to display ads on our website. These ads may contain "cookies" (see <http://e-comm.webopedia.com/TERM/c/cookie.html> for a definition of "cookie"). Cookies received with banner ads are collected by our ad-serving company, which records and reports aggregated information to advertisers. Examples of "aggregated" information would be the number of people who see an ad and the number of times people see the ad. The use of cookies also allows the ad-serving company to deliver ads that are more likely to interest you and to avoid showing you the same ad too many times.

Cookies cannot in themselves be used to identify any user of ReceiptCity. The ad serving company stores only information that you voluntarily provide and that cannot be identified as being associated with you. If, however, you prefer not to receive the benefits made possible by cookies, most browsers allow you to reject cookies or choose which cookies you want to accept and which ones you want to reject.

Security

Strong security measures protect this website against the loss, misuse, and alteration of the information stored at the website. Data encryption is the key to our security. For

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Figure WP22C

PrivacyOut.asp at www.receiptcity.com

Page 3 of 3

communication between systems. ReceiptCity uses protocols called Secure Socket Layer (SSL 3.0) and VPN (Virtual Private Network), depending upon the merchant providing receipts, that allow transactions to be encrypted to a very high standard of security. Digital Certificates are used for authentication and secure communications between ReceiptCity and merchants.

Sensitive information such as account numbers remain encrypted while stored in the ReceiptCity database. Our database server is protected in many ways, including dual firewalls, intrusion detection, and comprehensive access logging.

Information from "Outsiders"

The information on this site is provided by the people who use the site and the merchants that sponsor the site. It contains no information from parties that are not participants in your purchase transactions. For example, no information on the site comes from credit bureaus.

Your Choices

This website gives you the opportunity to decline further communication from us at the point where we request information about you. To do so, simply remove the check from the appropriate check box at the point of registration. This site also lets you remove from our database the information that you have provided to us if you want no future communication with us and no longer want to receive our services. To do this, send email to remove@ReceiptCity.

Correcting & Updating Your Information

At any time, you can change or modify information that you have already provided. To make changes, visit www.ReceiptCity.com, log-in and enter your password. Then, select "Profile." After making the changes you want, select "Update Info." To change the list of products that interest you, select from the toolbar "Offers/Events." Change the dates and events you want to be reminded about by selecting "Personal Reminders."

Contacting the Web Site

For answers to questions about this privacy statement, the practices of this website, or your experience with this website, please contact:

ReceiptCity Webmaster
@pos.com
3051 N. First Street
San Jose, CA 95134
Webmaster@receiptcity.com

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Please contact our [Webmaster](mailto:Webmaster@receiptcity.com) with questions or comments.

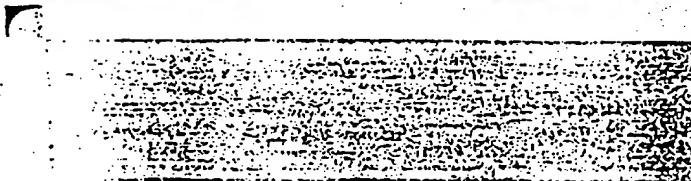
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@pos.com

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@pos.com is an internet company that web-enables the point-of-sale, allowing merchants to use web-based technology to streamline operations, reduce costs, and expand customer service capabilities.

[\[COMPANY INFO\]](#)[\[PRODUCTS/SERVICES\]](#)[\[INVESTORS\]](#)[\[CAREERS\]](#)[\[PARTNERS\]](#)[\[SITE MAP\]](#)

Online receipt
information
available at:

GO

@receipt
city.com

Figure WP23

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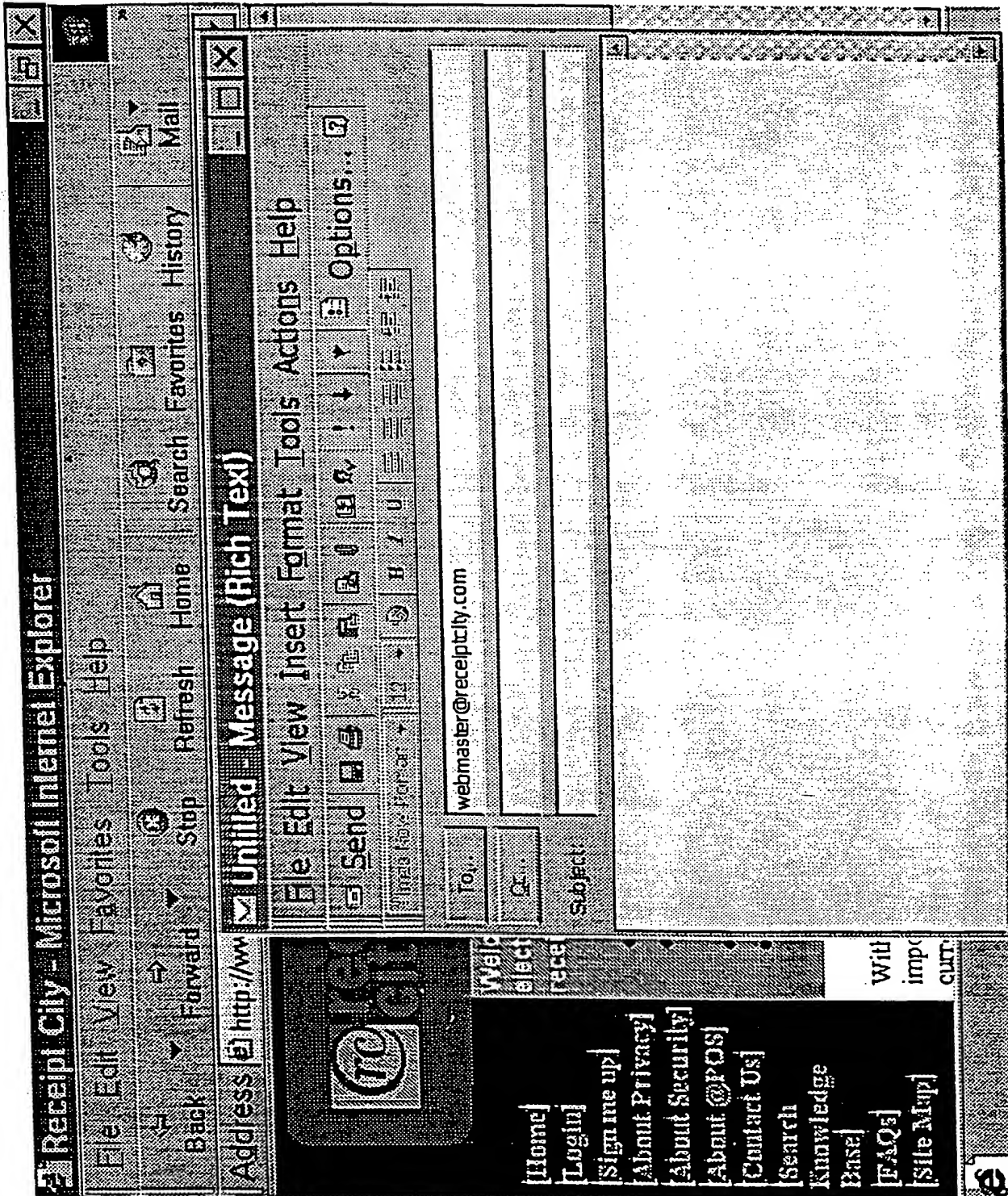
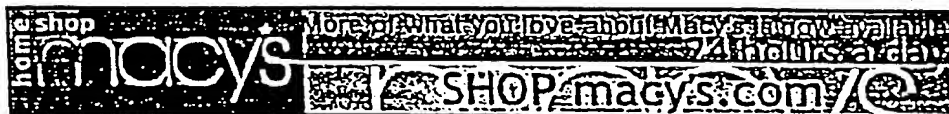


Figure WP24

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SearchOut.asp at www.receiptcity.com

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Search Knowledge Base

Keyword

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Figure WP25

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Figure WP26A

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Search Results

Q1. 1 - What is so special about ReceiptCity?

Ans. ReceiptCity is a secure Internet receipt vault for consumers. Here you can access your receipts for purchases you made with participating businesses. At ReceiptCity, you can download receipts into Quicken and Excel (for personal finance, tax reporting and expense reporting) and see exactly what was purchased (and for those who signed the receipt with electronic signature capture devices,) to answer credit card statement questions. With select merchants, you can also reorder a product, extend a warranty, order accessories, or ask for alternative items if you are dissatisfied and wish to return the item.

ReceiptCity can save you precious time and simplify your storage and searching for receipts.

Q1. 2 - Is receipt city free?

Ans. Yes, as a consumer there are no fees to access your receipts.

Q1. 3 - I do not find any receipts yet. When will merchant receipts exist in ReceiptCity for me?

Ans. We are currently populating the ReceiptCity site with transactions from a number of retailers in the San Francisco bay area. We are scheduling the arrival of receipts from several large retailer chains now and expect this to begin in the second half of 1999 and increase rapidly from there.

Meanwhile, if there are particular merchants you would like to see participate in this program, e-mail your request to webmaster@receiptcity.com and we'll let them know.

Q1. 4 - What do you do with the information you collect?

Ans. We only use the information to identify your receipts within the merchants' receipts and provide you with relevant promotions, reminders and other rewards. You can opt out from receiving these promotions at any time.

We take privacy very seriously. First, we do not own the receipt data, the merchant does, and second, we subscribe to accepted consumer privacy norms on the Internet. We are in the process of obtaining the TRUSTe seal with regards to privacy. TRUSTe is a not-for-profit company well known for promoting consumer-friendly privacy practices on the Internet. For more about our policies, click on our privacy statement.

Q1. 5 - When I make a purchase, how long does it take before a receipt is available at ReceiptCity?

Ans. This will depend upon the merchant and the merchant's connection to our data center. In general, receipts will be available by the following day or sooner.

Q1. 6 - Why do I have to "opt" for a receipt when I shop at a store with the interactive point of sale (iPOS) terminal and not automatically have receipts posted to ReceiptCity for me?

Ans. This is a policy that varies by merchant. Some merchants will automatically post these for registered ReceiptCity consumers while others will want you to choose.

Q1. 7 - How secure is ReceiptCity.com?

Ans. Modeled after many Internet banks, ReceiptCity's security uses multiple measures to protect against loss, misuse and alteration of the information under our control. Data "encryption" (a technique that makes information unreadable except to those with the unlocking "code") is the key. For communication between a merchant and ReceiptCity, we always use a

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Figure WP26B

SearchOutResult.asp at www.receiptcity.com

Page 2 of 2

protocol called Secure Socket Layer (SSL 3.0) orVPN (Virtual Private Network), which encrypts transactions to a very high standard of security. Digital Certificates are used for authentication and secure communications between ReceiptCity.com and merchants or other suppliers of data. In addition, sensitive information, such as account numbers, are encrypted while stored at ReceiptCity.com.

Our Data Center is located in a physically secure location which is monitored on a full time (24 x 7) basis. It contains state of the art equipment and software to monitor and ensure that only authorized users have access to the stored data.

Qt. 8 - Who do I contact if I have any questions about ReceiptCity.com or this website?

Ans. Please send any questions you may have about ReceiptCity services or this website to webmaster@receiptcity.com. We welcome the opportunity to make the services and website more useful and enjoyable to our clients and visitors.

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Please contact our Webmaster with questions or comments.

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FAQs

Qt. 1 - What is so special about ReceiptCity?

Ans. ReceiptCity is a secure Internet receipt vault for consumers. Here you can access your receipts for purchases you made with participating businesses. At ReceiptCity, you can download receipts into Quicken and Excel (for personal finance, tax reporting and expense reporting) and see exactly what was purchased (and for those who signed the receipt with electronic signature capture devices,) to answer credit card statement questions. With select merchants, you can also reorder a product, extend a warranty, order accessories, or ask for alternative items if you are dissatisfied and wish to return the item.

ReceiptCity can save you precious time and simplify your storage and searching for receipts.

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Qt. 7 - How secure is ReceiptCity.com?

Ans. Modeled after many Internet banks, ReceiptCity's security uses multiple measures to protect against loss, misuse and alteration of the information under our control. Data "encryption" (a technique that makes information unreadable except to those with the unlocking "code") is the key. For communication between a merchant and ReceiptCity, we always use a protocol called Secure Socket Layer (SSL 3.0) or VPN (Virtual Private

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*Figure WP27B*FAQs.asp at www.receiptcity.com

Page 2 of 2

Network), which encrypts transactions to a very high standard of security. Digital Certificates are used for authentication and secure communications between ReceiptCity.com and merchants or other suppliers of data. In addition, sensitive information, such as account numbers, are encrypted while stored at ReceiptCity.com.

Our Data Center is located in a physically secure location which is monitored on a full time (24 x 7) basis. It contains state of the art equipment and software to monitor and ensure that only authorized users have access to the stored data.

Ql. 8 - Who do I contact if I have any questions about ReceiptCity.com or this website?

Ans. Please send any questions you may have about ReceiptCity services or this website to webmaster@receiptcity.com. We welcome the opportunity to make the services and website more useful and enjoyable to our clients and visitors.

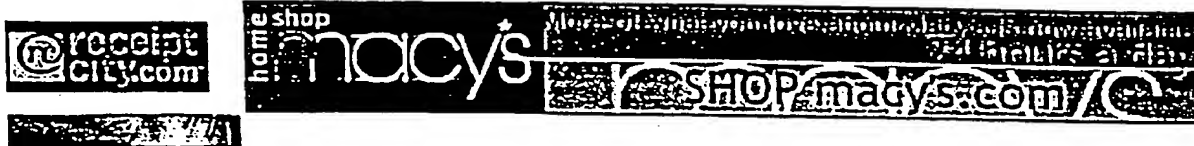
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siteMap.asp at www.receiptcity.com

Figure WP28

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Site Map

Before Login

- [Home](#) - ReceiptCity home page
- [Login \(SSL\)](#) - Login page for registered users
- [Sign Me Up \(SSL\)](#) - First time registration process to enter profile and validate user
- [About Privacy](#) - Detailed statement of our privacy commitments
- [About Security](#) - Description of the security methods for this site
- [About @POS.COM](#) - Link to the site which owns this one
- [E-mail Us](#) - Link to e-mail setup with address of webmaster@receiptcity.com
- [FAQs](#) - Frequently asked questions with answers for your information
- [Site Map](#) - You are there now.
- [Lost Password \(SSL\)](#) - If you can not remember your password, go here
- [Search Knowledge Base](#) - Search FAQs and other info available

After Login

- [My receipts \(SSL\)](#) - build a customized search for the specific receipts you desire
 - [View Receipts \(SSL\)](#) - View new receipts created since the bookmarked
 - [View This Month's Receipts \(SSL\)](#) - View receipts from purchases this month
 - [Receipt\(SSL\)](#) - Line item details for a receipt
 - [Download Data\(SSL\)](#) - Download page for Quicken and Excel format
 - [File It\(SSL\)](#) - File this particular receipt
 - [View Signature Form\(SSL\)](#) - Ask user to fill in a form before displaying a signature
 - [Signature Page\(SSL\)](#) - Displaying receipt details with signature
 - [Download Data\(SSL\)](#)
- [Offers/Events\(SSL\)](#) - Add and edit offers and events
- [Profile\(SSL\)](#) - Update your personal profile
- [Personal Reminders\(SSL\)](#) - Add or change reminders to be sent on personal events
- [Change Password\(SSL\)](#) - Specify a new personal password for access to receipts



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International Bureau



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(81) Designated States (*national*): CA, JP.

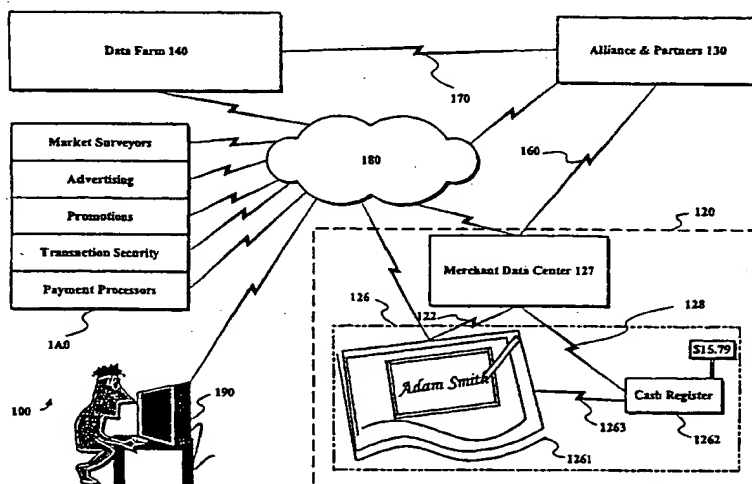
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CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE).

Published:
— With international search report.

(88) Date of publication of the international search report:
25 May 2001

For two-letter codes and other abbreviations, refer to the "Guid-
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ning of each regular issue of the PCT Gazette.

(54) Title: AN ELECTRONIC-RECEIPTS SERVICE



(57) Abstract: Apparatus and methods for a web-based transaction data storage and retrieval offering for merchants and customers, providing; retailers the operational cost savings of electronic signature capture with minimal integration of such signatures into their legacy systems. Transaction data including signatures are securely transmitted from the merchant to the remote, transaction-record repository. An internet browser then accesses an electronic-records-service web-site that provides a straightforward, user-friendly interface (for searching transaction-record data) for recreating receipts as proof of a transaction. When a transaction record (a receipt, for example) is required, the customer, the merchant's employees or designated financial agents of the customer or the merchant (banks or payment processors, for example) can access the electronics-records service through an internet using a web browser. These records can be viewed, downloaded or printed; or faxed or e-mailed to the desired recipient.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/15368

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/60 G07F19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G07F G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SIEGFRIED HERDA: "NON-REPUDIATION: CONSTITUTING EVIDENCE AND PROOF IN DIGITAL COOPERATION" COMPUTER STANDARDS AND INTERFACES, CH, ELSEVIER SEQUOIA. LAUSANNE, vol. 17, no. 1, 1995, pages 69-79, XP000611337 ISSN: 0920-5489 the whole document	1-29
P, X	EP 0 969 430 A (SUN MICROSYSTEMS INC) 5 January 2000 (2000-01-05) abstract page 3, line 25 -page 4, line 15 page 7, line 28 -page 8, line 28 page 13, line 38 -page 14, line 45; claims; figures	1-7, 13-20, 22, 27, 29

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

8 December 2000

Date of mailing of the international search report

18/12/2000

Name and mailing address of the ISA

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Authorized officer

Guivolt, O

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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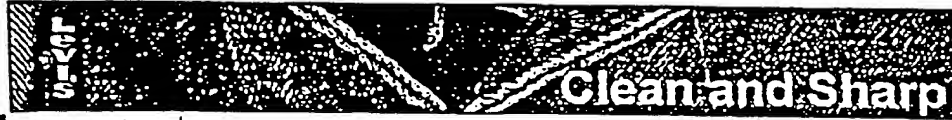
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DEPT	ITEM	PRICE	QTY	YOUR	
863	354174	\$11.99	1	N	\$11.99
	SADDLES LINK BRAID/B				
863	7603981	\$13.99	1	N	\$13.99
	JULIANCASU/ASTPK/RFD				
850	223395	\$23.99	1	N	\$23.99
	ZYLOS HERRINGBONE ND				
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	Total				\$49.97
AMEX	Credit Card				\$49.97
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